

# THE NORTH DAKOTA FARMER



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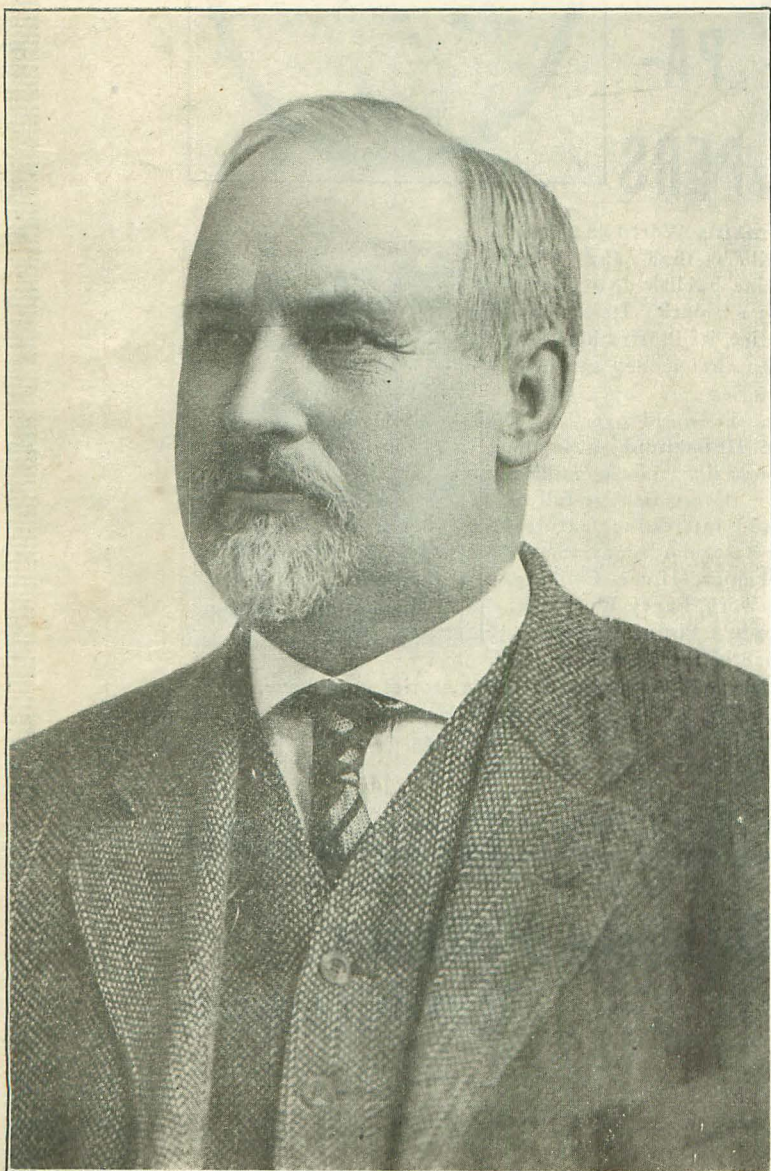
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Vol. 16, No. 4

Lisbon, North Dakota, October 15, 1914

50 Cents A Year



E. F. Ladd, Food Commissioner of North Dakota

## Making Food Poisoning A Crime in North Dakota

The North Dakota  
Standard's Trib-  
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A Story of a Be-  
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Stout Enforcement  
Against the Most  
Severe Pressure.

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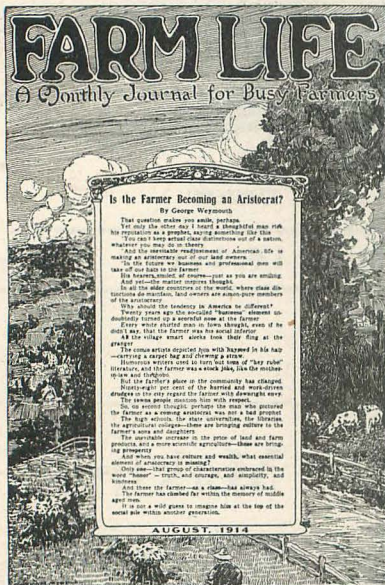
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# THE NORTH DAKOTA FARMER

Vol. 16, No. 4

LISBON N. D., OCTOBER 15, 1914

50 Cents a Year

## Making Food Poisoning A Crime in North Dakota

**H**AS the Food Law paid? Has all the fight, all the work, all the trouble and expense been of no value or benefit to the people of the state? That will depend upon your viewpoint. If to have pure foods, if to have the water squeezed out of the oysters, if to be rid of rotten tomatoes used in the manufacture of catsup, if to have coal tar dye, used for deception and fraud, driven out, if to have our meats free from chemical preservatives, borax and sulfites, if to have our extracts free from the poisonous wood alcohol and made from the actual lemon or vanilla bean and not imitations made from drugs, if to have our spices made wholly from the ingredients from which they are supposed to be produced, and not from ground up cereals, olive stones, and cocoanut shells, if to have better sanitary conditions in and about places where food products are manufactured and handled, are any factors in promoting health and happiness, in making better civilization, then the Food Law has paid. On the other hand, if you are one of those who believe that each man should look out for himself, that you are not responsible for any fraud and deception that may be put over another, if honesty is not to count, then, perhaps, the Food Law has been a failure.

Let us see what the condition was when our Food Law went in force in North Dakota. Practically every can of corn sold in the state of North Dakota at that time was bleached with sulfites to make it white and often because the corn was damaged and not kept under sanitary conditions at the factory; then, again to return to it some of its sweetness saccharin was added, which is a coal tar sugar. Our jellies and our jams were colored with coal tar dyes, preserved with salicylic acid, benzoic acid or formaldehyde; the jellies had as their base the waste products from apple canning establishments,—cores, rotten apples, peelings,

and the refuse as it was gathered up from the factory, partially dried, and shipped to the manufacturer of jellies, who used this as the base for all his jellies, and to this often added starch paste, chemical flavors and color to resemble the particular types of jelly he wanted to put out. Pure jellies were scarcely to be had upon the markets of the state. Canned tomatoes were often green, or waste material was mixed with the tomatoes, and the whole colored red with coal tar dye. The peas were preserved with boric acid and colored with copper salts. There was scarcely a place where hamburger steak or sausage would be had, pure and free from sulfites and boric acid. Even the canned meats contained borax to make sure that they would keep. Maple sugar and maple syrup seldom contained more than 10% of the genuine article. Vinegar sold at a high price as cider vinegar rarely ever contained any true cider vinegar at all. Seventy per cent of the whiskies sold in North Dakota at drugstores contained no trace of any true whiskey, and 90% of them were more or less adulterated. In fact, one could hardly go into the average restaurant and hotel and procure a meal without one-half to two-thirds of the items being adulterated products. Ground cereals, colored in imitation of spices, mixed with ground-up cocoanut shells and olive stones, was a well-known recognized commodity, sold to the spice grinders as an adulterant for their spices.

It is no wonder that stomach troubles, kidney troubles and like complaints were so prevalent at that time, since those who lived largely at the restaurants and cheap boarding-houses were forced to eat quantities of such chemically preserved foods that they could hardly be expected to maintain good health. Jams could be found upon the market made from the refuse products of apples, mixed with starch paste, to which grass-seed had been added, the whole chemically

colored with coal tar dye, sweetened with saccharin, and flavored in imitation of the particular jam desired. Again, many of the pickles found upon the market at that time were made indigestible by the use of alum; they were greened by copper salts, and sweetened with saccharin, while catsups were made from a base of rotten, putrefying refuse of the tomato canning factory, preserved with benzoate of soda, colored with coal tar dye, sweetened with saccharin, highly spiced, and made into an article of food that, in its original condition, no one would ever think of using. Yet, such was the condition before the North Dakota Food Law was enacted. The extracts upon the market rarely ever contained any of the true extract, and at times were made from wood alcohol without any regard for the health of the individuals who were to be users of the same. Wood alcohol was not an unknown constituent in some of the cheap beverages, as well as in bay rum, Florida waters, perfumes and various other preparations to be used upon the person. Even our canned meats were far from what they were represented to be, for samples are reported as being sold for chicken or turkey, when, in reality, they were veal; and yet, these things were sanctioned by some of the leading manufacturers. For example, Vice-President Sherman is reported as saying that the substitution of saccharin for sugar saved his firm in one year \$4,000. In other words, a pound of saccharin, without any food value whatever, took the place of 500 pounds of sugar, and the laboring man who purchased this product received no nourishment whatever. Yet powerful interests fought at every step to prevent any National enactment of Law, and to prevent its enforcement when the same had been enacted.

It was a new thing when North Dakota published her first food bulletin giving a list of adulterated food products, naming the manufacturers



thereof and stating wherein the products were adulterated. It brought consternation to the camp of the food adulterators. They rushed to arms, and at once 22 firms joined in a libel suit against Professor Ladd, a libel suit for \$100,000 damage; and then they were good enough to send our Food Commissioner word that if he would, thru the press, retract and state that an error had been made in the findings, they would drop the suit. But no, Professor Ladd stated openly again that he not only reaffirmed all that he had stated in the Bulletin, but if he were given a chance in court he would show that he had told only one-half of the truth with regard to the products.

The manufacturers tell the public that they are anxious to comply with every law, and, yet, show me a law where there has been a possible chance for a fight that the manufacturers did not put up a bitter fight. First, the libel suit. Then the paint manufacturers refused to comply with the requirements of the Law and let the public know what their product contained; hence, the paint fight which extended from one end of the U. S. to the other in its influence, and went from the lower courts to the Supreme Court of the United States.

The great packing houses were not satisfied. They refused to give up the right to put borax in their meat, and a fight was made to win back the rights of the people to have a pure product in the way of meat.

Then the whiskey element, who were selling an article 70% of which contained no whiskey, contested the right of Professor Ladd to enforce the rulings he had made under the Law, namely, that no imitation, or compound whiskeys should be sold in the state of North Dakota as medicine, and secured a temporary injunction claiming that they would show that this did not come under the Drug Laws of the state, inasmuch as it was sold by the drugstores as a beverage. But when the druggists were informed that, if they went into court and stated that they were selling this whiskey as a beverage and not as a medicine, they would be prosecuted under the Prohibition Law, there were no witnesses to be had, and the case again was dropped.

Again the packers maintained their right to short-weight the public, and the American people are today being robbed of millions of dollars every year for articles which they never receive thru short weight and measure. North Dakota attempted to enforce its Weight and Measure Law and found itself thwarted at every turn. It then enacted a more stringent Law

and a test case was made upon lard. Did the packers comply? No, they came into court and maintained the right to continue to short-weight the public in lard and they are still doing the same thing with meats.

The history of the enactment of the Snuff Law is familiar to all. The manufacturers of this product came into the state and fought their case for the right to sell a dope that is undermining the health and morals of the people of our state, especially the laboring man and the young boy, but they lost their case. And so it has been, every right that has been won back for the people has been thru hard and bitter fighting against the "interests" that are determined to filch from the pockets of the people; and here again, as pointed out by Prof. Ladd in his remarks before the W. C. T. U., "the meanest man in the business sets the pace for all the rest and drags them down to his level or forces them out of business." Have they been satisfied to come into court and fight their cases openly? No, they have resorted to subterfuge; they have resorted to bribery; they have resorted to bringing influence to bear against those whose duty it was to enforce the Law so as to prevent any interference. They posed as honest manufacturers and promoters of the health of the public, and yet, one of these firms comes into the Office of the Food Commissioner of North Dakota and says: "Your men have made a mistake in the analysis of our products. You make a personal investigation and you will discover this, and as it will be a matter of considerable expense, we will deposit with you \$1,000." Was this not intended as a bribe? But the man offering the bribe did not benefit from the same.

Again, when the Drug Law was before the Legislature of North Dakota, a representative of the patent medicine organization of this country visited the city of Fargo and thru one of the business men asked Professor Ladd to come down and meet him for a conference. When left alone, what was the proposition? It was simply this: How much will you take to withdraw your influence for the Drug Bill of North Dakota? Was not this an open bribe, intending to win by methods which no honorable firm or man would have adopted. The man who acted as a representative of this organization was not an honorable man; he was a lobbyist of one of the most damnable organizations that has ever been thrust upon the American people, an organization which has not only debauched the public, debauched the Legislature, but has de-

bauched the press by its methods and tactics which have been adopted, and this, to a considerable extent thru their red-clause advertising methods.

When the libel suit for \$100,000 was pending against Professor Ladd, finding that they were likely to lose the case, they resorted to further subterfuge. They induced the National Canners' Association to invite the Commissioner to speak before their Association. Innocently, so far as the officers of the Canners' Association were concerned, the invitation was extended and Professor Ladd accepted. What was the plan? One of the 22 firms who had been a party to the original suit, it is reported, was prepared to bring a libel suit against Professor Ladd in Ohio, where he would be away from home, where he must bring his attorneys, his witnesses, his information, and then it was believed they could crush him. They prided themselves upon what they had accomplished, and, their success being so well assured, they chuckled at last being able to crush our Food Commissioner by this method; and they did not hesitate to tell others, whom they supposed were their friends, of what would be done within a few days. One man, tho no special friend of Professor Ladd, did not believe that such a course was honorable, and the latter, after he had reached St. Paul on his way to attend the Convention, being warned thru this man's influence of the trap that had been set for him, returned to North Dakota. The records of the Convention show something of the consternation when it was found that again they had failed in their trick.

These are by no means the worst tactics they have adopted. Other instances of the use of political pressure, of their influence, and their very bold assertion that the Commissioner of North Dakota could not win a case in the state against them, and of their attempt to lead the Commissioner into a trap set with the expectation that they would be able to crush him, have thus far failed, as have the Bills which they have prepared, and at times held ready, and at other times introduced into the Legislature.

Twelve-year old whikey made in 30 minutes furnishes a big profit and a temptation to those who are ready to resort to this method of doing business. How can the man who makes a genuine article and stores his goods for eight years be expected to compete with such a product? Or, how can the man whose splendid appearing article of cloth, made from 10% of Australian wool, 10% cotton and 80% ground-up rags, do other than drive the honest manufacturer of



goods from the market? Yet, in spite of all this North Dakota has some of the best laws and most progressive that have been enacted in the United States. They include laws for feeding stuffs, insecticides, paints, oils, drugs, patent medicines, beverages, cold storage, false advertising, and foods. Still there are those who, for the sake of a few extra dollars, would wipe these laws off from the Statute books that they might again deceive and mislead the public, make their products in imitation of the genuine article, and drive the real article from the market until every man, woman and child should be forced to buy as food and raiment the adulterated, misbranded, and often worthless preparation or product, to undermine the health of themselves and their children.

Some of these men who have succeeded in defrauding the people of North Dakota of thousands upon thousands of dollars, have fought by every known means to prevent Professor Ladd from enforcing the Law. They have even filed charges with the Board of Trustees against him; they have even published in the press charges that he was under the influence of "interests" that were working against North Dakota and the farmers of the state. But the very fact that recently one of the most active concerns has been denied the right to the use of the mails, on account of fraud, is evidence that the Commissioner has been fighting for the rights of the people. But in spite of the fact our Food Commissioner has lived to see

the time when corn is no longer bleached with sulfites, or sweetened with saccharin, when peas are no longer colored with copper salts, when jellies and jams are made from the fruit as claimed, and not from starch paste, glucose, coal tar dyes, chemical preservatives and flavors; when alum and saccharin are no longer found in pickles; when catsup is made from natural and healthy material; and maple products are what they are represented to be; when the extracts are pure and contain no wood alcohol. And yet, in the enforcement of these laws the Commissioner has never driven from the market a single article of food, a single article of adulteration. He has only demanded that the truth shall be shown upon the label, that the people shall have a chance to select for themselves; and if there is any man who wants ground-up cocoanut shells for pepper he is entitled to have the same. But North Dakota's Food Commissioner believes that such ingredients have no place in our food products, that the people do not demand cocoanut shells, nor ground and colored cereals in place of spices, nor glucose and starch paste as strawberry or currant jelly. If there are those in the state who desire to have saccharin in their foods, or benzoate of soda, or salicylic acid, or alcohol, or copper salts, they can add the same in any quantity to suit themselves, but they shall not be contained in the product as it is prepared and sold to an unaware consuming public.—*North Dakota Standard.*

not farmed but held by non-residents for speculative purposes, can readily be taxed against the land, while weeds growing along the highways should be destroyed by the road overseer. Where weeds grow elsewhere, as on the cultivated lands, the problem is one which resident farmers must work out for themselves or suffer the consequence. That many are now suffering frightful losses on account of wild oats and other noxious weeds, there can be no question. A conservative elevator man, taking into consideration the condition of grain as it was marketed, estimates that not less than 17,000,000 bushels of dockage, mostly wild oats, represented the amount of dirt and weed seeds that were shipped out of the state last season. When one considers the extra labor, twine, cutting, hauling, threshing, and freight bills that must be charged up thus to the presence of weeds, the damage they accomplish is startling, to say the least.

Nor is this all. The principal damage they do, in a country not oversupplied with moisture, is the droughty conditions which they cause. Weeds being gross feeders not only rob the grain which they infest, of plant food but of moisture.

This latter fact is most important, since the average precipitation in the state just about squares with the demands of the average crop. When, therefore, any considerable amount of moisture is wasted, either on account of unnecessary evaporation or the presence of weeds in large quantities, the crops are bound to suffer. Any system of farm management, therefore, that tends to eliminate weeds also tends to conserve moisture. Moreover, if a cultivated crop, such as corn or potatoes, is made a regular factor in the rotation, and the area thus devoted to a cultivated crop is large enough to cover the entire farm, about once every five years the weeds may be held in check even tho not entirely eradicated.

The general dockage last season was, according to careful observers, about six pounds per bushel, tho many instances of twelve, sixteen and even as high as twenty-six pounds per bushel were reported. My figures are based on the calculations made by a man operating elevators and whose knowledge of the condition of grain thruout the state was extensive.

An evil of such magnitude is not to be lightly considered. The loss farmers sustain is too great, and the further fact that the weeds increase in geometrical ratio, calls for a remedy sufficiently drastic to counteract the evil.

## Weeds, Weeds, Weeds

By President J. H. Worst, N. D. A. C.

**W**EEDS are plants growing in the wrong place. They are in the physical world what many contend that sin is in the moral world. And yet there seems to be a mission for both weeds and sin, else a wise and beneficent Creator would not have permitted their existence. Doubtless both exist for the value one receives financially and spiritually on account of the effort necessary to destroy them.

Weeds evidently should be destroyed. The process of destroying weeds not only improves the soil on account of the cultivation required to kill them, but the planning necessary to outgeneral an assortment of weeds improves the mind. Victory over a weedy farm, like any other victory, is exhilarating.

The fact is quite apparent to thousands of wide-a-woke farmers that they must either conquer the weeds or be conquered by them. A farmer cannot succeed so well at weed eradication when working alone, however industrious and zealous he may be, for the reason that birds and spring winds are great distributors of weed seeds. The man with the dirty farm not only suffers on account of their presence, but he makes endless trouble for his neighbors as well.

For this reason co-operation is necessary, even to the enactment and enforcement of most stringent laws against allowing weeds to flourish and go to seed on private lands. Public lands are more easily controlled. The cost of exterminating weeds on lands



As before remarked, a farmer can accomplish but little without the co-operation of his neighbors. A general system of crop rotation with about one-fifth of the farmed area devoted to a cultivated crop, especially corn, and the wild oats that grow up in the hill, hand pulled, so that none go to seed, will go a long way toward keeping the weeds on the farm reduced to negligible numbers; but with no physical obstruction against the distribution of weed seeds by the spring winds, the task of keeping weeds in subjection is most difficult. Where farmers generally co-operate for the eradication of weeds, however, the chances for their extermination is more promising.

Co-operation without a plain, consistent, and workable law, with provision for its most rigid enforcement, however, will hardly be realized. It almost seems as though some kinds of co-operation must be made compulsory. The evils that are now apparent and the greater evils yet in store from the increase of noxious weeds, such as wild oats, kindhead, sow and Canada thistles and quack grass, would seem to make an issue of such proportions as to arouse public opinion sufficiently to wage a war of extermination against them.

For business reasons seed merchants are generally against drastic laws regulating their business. Many of them have done irreparable injury to the state by selling seed grain contaminated with foul seeds. Farmers also are often opposed to the rigid enforcement of laws regulating the sale of hay containing weed seeds, such as quack grass, or seed grain contaminated with a percentage of foul seeds as well as for enforcing laws for the destruction of weeds growing on their farms. But the business opportunity of seedsmen and the license of farmers to thus further pollute the state would seem less important than the general welfare; and hence the sale of impure seeds of every character should be prohibited by law with penalties stiff enough to command their respect. Furthermore, some system of general and earnest co-oper-

ation for the eradication of bad weeds must be organized for the state's good name and for the farmer's prosperity.

Livestock is perhaps the most feasible remedy and at the same time the most business-like and rational. Sheep are good weed scavengers, and sheep as well as all other kinds of livestock require roughage and other sorts of feed, the production of which insures the destruction of weeds. The cultivation of corn, potatoes and other root crops, together with alfalfa and pasture and meadow lands, all discourage the propagation of weeds.

Moreover, the presence of livestock on the farm insures abundance of manure which maintains the fertility of the soil and not only arrests evaporation but makes the cereal crops themselves economical of moisture.

In other words manure in the soil retards capillarity and also enables the plant to mature on a little more than half as much moisture as when grown from soil lacking in humus.

In a semi-arid country moisture is the governing factor that regulates the yield of grain obtained at harvest time. Its conservation, therefore, is of the utmost importance and nothing sucks it out faster than weeds nor conserves it more than abundance of manure and thorough tillage, the farmer depending upon the feeding of livestock on the farm and the latter upon the intelligence and industry of the farmer. As a matter of fact where livestock is popular, intelligence and industry are seldom wanting.

One thing is so apparent that it seems no longer debatable, namely, the day of successful all-small-grain farming is past. The farmer to be will be a farmer in the full sense of the word, and will not permit a hot day, a frost, a dose of rust or a hail storm to wipe out his year's work. Weeds, gophers, and drought, resulting from weeds together with other drawbacks, are the scourges that are driving North Dakota farmers into a more rational husbandry—one that will insure a measure of prosperity in proportion to the intelligence and industry the farmer commands.

well as a matter of record, there is no such thing as a change in climate or a change in precipitation.

The Spanish Government was the first government to keep meteorological records, that is records of rainfall, of snowfall, the prevailing direction of the winds and the barometer and thermometer conditions. The Spanish began this work in the Philippine Islands about 300 years ago. The British Government has kept meteorological records for about 120 years, more or less accurate, and our government has kept meteorological records for about 80 years, quite accurately in most parts of the country for 60 years. Perhaps the most accurate records kept anywhere were those kept at the frontier army posts in the west 30, 40 and 50 years ago, and all those records go to show that there is really no such thing as a change in climate, or change in precipitation. As a matter of fact you can take 10 or 12 years out of any cycle of years, take it from either end or the middle, or any place else, and the precipitation for say 10 years will average almost exactly with any other 10 years.

The real reason for this is that perhaps 95% of our rainfall comes from the ocean. In all that region between the Atlantic and the Rocky Mountains, the rainfall comes from the Atlantic ocean or the Gulf of Mexico. The reason for this is that water evaporates more readily from salt water than it does from fresh water, and then of course nearly 80% of the earth's surface is covered by salt water. The water comes inland a few or many hundred miles at a time, depending on the air currents. It comes in the form of what we call "clouds" and is precipitated, after which it is evaporated or transpired thru the leaves of growing vegetation, and gets back in the atmosphere, and takes another step inland, and is again precipitated and again evaporated and transpired, and so on.

And while all records go to show that there is no such thing as a change of climate, or precipitation, the Weather Bureau figures for the "west" show a higher atmospheric humidity now than they did before the country was "settled." This, no doubt, is caused by the transpiration into the atmosphere of water from growing plants. Also, it is likely this atmospheric moisture has value in lessening evaporation, which naturally saves moisture.

Take, for instance, the region north or northwest of Devils Lake, in North Dakota. Before that region, which is drained by Devils Lake, was broken by the plow, the bulk of the rainfall that came naturally gravitated into

## Moisture Conservation

By J. S. Murphy

The excessive amount of moisture in North Dakota during the present season, brings up the old question as to whether there is a change in precipitation.

It used to be said years ago, that "the rain follows the plow." That as a country is subdued and the "Indian got out of the soil" the country got more rainfall. As a matter of fact, as



Devils Lake. Now that that whole region is under plow, the shore line of Devils Lake has receded from four to six miles, simply because the water that falls on that territory is absorbed into the ground, and gets back into the atmosphere thru evaporation and transpiration. Necessarily, therefore, there must be more humidity in the atmosphere.

Assuming this to be true, namely, that there is more atmospheric humidity now than before the country was broken up, it follows that it does not take so much water to produce a pound of dry matter as it did formerly. The Government experiment stations, and scientific men generally, agree that it takes between 30,000 and 45,000 pounds of water, depending on the altitude, aridity, wind, sun, etc., to produce a bushel of wheat.

The reason that North Dakota is a safer state, in which to "farm" than states to the south that receive annually about the same rainfall, is that since North Dakota has been put under cultivation generally, there is more atmospheric humidity and then again, of course, North Dakota receives on the average about 64% of its annual precipitation during the growing season, while the semi-arid states to the south receive considerably less than 50% of its annual precipitation during the growing season. Likewise, the intense aridity of the regions to the south calls for more pounds of water to produce a pound of dry matter.

And while it is true that there is no such thing as a change of climate, it is also true that atmospheric moisture which is increased, as a new country is put under cultivation and moisture is conserved, saves moisture.

I am quite convinced, for instance, that systematic storing of water in the soil of North Dakota, when that state is all under cultivation and moisture conservation is intelligently practiced, as it will be, will eventually affect favorably the raising of crops in Montana, for up almost to this time, most of the rainfall in North Dakota got back to the ocean thru rivers direct, while the accumulation of water in the ground will cause it to escape into the atmosphere, mostly through transpiration through the leaves of growing vegetation, and thus the air currents, from the east, and the rainfall in that region comes from the east, will be more moisture laden than formerly.

On April 1st, 1914, the records showed North Dakota short nearly 13 inches in rainfall for the years 1910, 1911, 1912 and 1913.

It now looks as tho a great part of that shortage will be made up this

year, which is further evidence of the fact that "nothing prevails" so uniformly as the laws of averages in meteorology." And this quotation which has become an axiom among meteorologists, is true taken in periods of ten or more years, notwithstanding the uncertainties, eccentricities and idiosyncracies of the weather as a whole.

Such years as 1914 in North Dakota are very apt to make the average farmer careless in conserving moisture. The experienced intelligent farmer, however, now realizes that the consistent accumulation of moisture must always be the one outstanding central idea in successful farming in states like North Dakota. In fact the sound, commonsense principles underlying moisture conservation applies not only to states like North Dakota, but to every middle west state. In states like Indiana, Illinois, Iowa and Missouri—states lying entirely within the so-called humid belt—more loss is sustained by drought than from any other one cause. In 1913 I saw thousands of acres of corn in Missouri without a nubin of corn on a stalk because of dry weather, northern Missouri and southern and western Illinois are dry again this year.

And speaking of moisture conservation: It seems odd, but a fact nevertheless, that thru the ordinary channels of information it requires many years to popularize a scientific truth and demonstrate its practical application to those who should know and profit by it. The conservation of moisture as a first aid to safe farming was preached for years before the average farmer acknowledged the great beneficial results flowing from it. It is now regarded generally as a practical thing—a fact demonstrated.

Farming in regions receiving between 16 and 22 inches of rainfall was formerly a gambling proposition. It is not so longer, for we can now, if we will, make climatic conditions subservient to tillage methods, instead of making tillage methods subservient to climatic conditions.

In moisture conservation the three main factors not to be lost sight of are:

First: Deep plowing—thus creating a reservoir for the water, which also increases the absorbing capacity of the soil below the plowing.

Second: Working the land with disc and harrow so that the bigger air spaces are eliminated, so that capillarity can get in its work.

Third: Evaporation must be checked by establishing and keeping established a surface mulch.

The deep retentive clay subsoil underlying practically all North Dakota

seems to have been placed there by a beneficent providence in order to make easy the accumulation and retention of moisture.

The writer wishes to go on record as saying that the time is not distant when it will be found that, having subordinated everything else to moisture conservation, seventeen inches of rainfall will be ample to produce in great abundance, every crop grown in this zone. In fact, more than seventeen inches of rainfall will be a hindrance instead of a help.

When that time comes—and it is here now for those who are doing intelligent farming—farming in North Dakota will be "farming" under the pleasantest, safest and surest conditions anywhere between the oceans.

## TRACTOR VS HORSE POWER ON FARMS

Wayne Dinsmore, Secretary Percheron Society of America

The American farmers who contemplate purchasing tractors for general use in farm operations will do well to consider thoughtfully the experience of Canadian farmers, who have made the most extensive use of tractors of any farmers in the world.

Reasons for the general use of tractors in Saskatchewan, Alberta and Manitoba were:

1. Large areas of prairie sod purchased at low prices, and of such character as to render feasible operation of from 500 to 2000 acres per field.

2. High prices of horses, and refusal of horse owners to sell unless substantial cash payment were made.

3. Willingness of tractor companies to sell complete outfits, costing from \$4000 to \$10,000, on very small initial payments, and long time notes, most of them running for three years.

4. Knowledge that such outfits had been known to break from 20 to 30 acres of sod per day when handled by experts.

5. Lack of knowledge as to depreciation and cost of operation of such engine outfits, especially in comparison with the cost of horse operations.

The result was the purchase of thousands of tractors in the Canadian northwest. They have now been used from two to five years, and the Canadian farmers, business men, and bankers have had experience enough to know their advantages and disadvantages. The net result is an overwhelming decision against such outfits for general farm work. A few have been successful with tractors, but even these can not show returns that will indicate any advantage over horse outfits.



Briefly stated, Dominion farmers have found that it costs more to plow, disc, seed or harvest, with tractors, than with horses, when interest on investment and depreciation in value are properly figured in. The writer in July, 1914 made an extended trip thru northwestern Canada, and secured detailed cost figures from many farmers. To give all, is out of the question in this article, but the detailed data supplied by Mr. Charles Esterbrook of Alberta is given for illustration:

**Daily Cost Figures on Tractor Plowing. Gas Engine 45 H. P., 25 H. P. on Drawbar Plowing Strip Ten Feet Wide.**

Cost of engine and plows, \$3990.00	
Interest on same at 7% \$279.30 per year or on 313 working days, per day, 88 cents.....	.88
Depreciation 25% on total \$3990 or \$997.50 per year, or \$3.19 per day.....	\$3.19
Gasoline 45 gals. per day 33½ cts delivered at farm per day....	15.00
Cylinder oil 3 gals. at 80 cts. per gal.....	2.40
Gear oil, 1 gal. per day, at 30 cts. per gal.....	.30
Hard oil and transmission grease estimate per day—10 cts.....	.10
Engineer per day.....	5.00
Competent plowman, per day....	3.50
Board of same two men at 50c each per day.....	1.00
Total.....	31.37
Average plowed per day 20 acres, or average cost per acre of.....	\$1.57
In the preceding we did not figure in the cost of sharpening plows as he uses disc plows, sharpens but once a season at 50 cents per disc, or \$7.00 per season for 14 discs.	

Mr. Esterbrook had not figured his horse plowing costs, but on request gave the following actual cost figures.

**Daily Cost Figures on Horse Plowing Gang Plow, Two 12-inch Plows, six Horses Worked Together.**

Cost of gang plow—2, 12 inch plows and 2 extra shares \$90	
Interest on same at 7% \$6.30 per year, or on 313 days, 2 cts. per day.....	.02
Depreciation 10% per year; repairs 5%; total \$13.50 per year or 4 cents per day.....	.04
Value of six horses used on gang \$150 per pair, or \$450 for the six small horses	
Interest on same at 7% \$31.50 per year, or 10 cents per day	.10
Depreciation nil—increase in value of young animals being broken, and produce from mares offsetting loss and depreciation	
Cost of man at \$40. per month, per day \$1.53.....	1.53
Board of man per day.....	.50
Feed of six horses	
Each 18 qts. of oats per day at 32 cts. per bu. for 6....	1.08
Each 21 lbs. of hay per day at \$7.00 per ton for 6....	.57
Harness 3 sets at \$40 per set \$120	
Interest on same at 7%—\$8.40 per year, or per day.....	.0268
Depreciation on harness 10% per year; repairs 5%, total 15% or \$18 per year per day	.057
Sharpening plow points, estimated at 30 cts. per day each gang.....	.30
Total.....	\$4.16
Average plowed per day 5 acres	
Cost per acre.....	.83

Mr. Esterbrook in commenting on the matter remarked that he himself had not previously recognized how great the difference was, and added that his chief purpose in buying the tractor was to have his own thrashing outfit, as he had found it difficult to have this work done in time to escape snowfall. He added that he had been planning to decrease the field work done with the tractor, holding it principally for other work.

Other farmers who gave detailed cost figures confirmed in substance the data given by Esterbrook. All were agreed in declaring that 20 acres was the maximum acreage plowed per day when a season's work was considered, and the majority were of the opinion that this was above the average.

The highest cost figure given by any farmer for horse plowing was 83 cents; the lowest cost given by any on tractor plowing was \$1.55. All agreed, also, that the tractor suffered a still greater disadvantage in the lighter work, such as discing, seeding and harvesting.

Still more significant of the judgment of Canadians on this question was their actual field procedure, seen in an extended auto trip in Alberta at a time when summer fallowing was in progress. But three tractor outfits were seen at work, but we passed hundreds of horse drawn plows. At numerous places we found tractors idle in the farm yards or sheds, while the farmers were doing the field work with horses.

Leading bankers and managers of land and loan companies were interviewed regarding the financial success of farmers who operated with tractor outfits as compared with farmers who used horses. Without exception, they declared emphatically that men who

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held to horses had scored much the greater success. Several declared that they would rather, ten to one, loan money to farmers who operated with horses: and several stated that they had no money to loan to farmers who bought tractor outfits, unless the buyer had sufficient resources to lose all he had put in the tractor and still remain solvent. Even then, the loan was not favored.

Commercial men, familiar with conditions, expressed substantially the same views. The consensus of opinion was that tractors were effective in sod breaking, and that their use has hastened the tillage of Canadian broad prairies; but it was also felt that the purchase and use of such outfits had bankrupted thousands of farmers, and that their use should be discontinued save for threshing, road work, and the breaking of prairie sod.

Over investment in machinery has been a costly mistake made by thousands of American farmers. Men who can profitably use tractor outfits under our farming conditions are not the rule, but the exception. No tractor has yet been devised that will utilize the rough feeds and grasses of the farm as fuel, and none have been built that will reproduce themselves by breeding while carrying out the work of the farm.

#### EXPERIMENT STATION NOTES

##### New Professor of Dairying

J. H. Keithly has been appointed Professor of Dairying in the North Dakota Agricultural College. Mr. Keithly comes from the Bureau of Animal Industry, U. S. Department of Agriculture, where he was employed in the manufacturing department. He is a graduate of the Missouri College of Agriculture. After graduation he was assistant to Prof. Eccles until appointed to the federal position.

##### Tuberculosis in Poultry

In the investigations in poultry tuberculosis carried on at the North Dakota Experiment Station it was found that old chickens were more affected with the disease than the young stock. The conclusion to be made from this is that the old birds should be killed off and only young stock kept. It was also found that tuberculosis spread faster among poultry kept in poorly lighted and poorly ventilated houses.

##### Weeds Along the Road

The weeds along the road will hold snow. In some cases they will hold so much snow that the road becomes impassable and the result is driving across the field and in some cases the cutting of fences. Now is the time to

remove these weeds so as to keep the snow from drifting onto the road bed. Watch the roads next winter and it will be surprising how few weeds it sometimes takes to stop a lot of snow.

##### Corn Stalks and Snow

It is sometimes a good plan to leave some of the corn stalks standing. Every fourth row left standing will hold a lot of snow on the land. At the North Dakota Experiment Station it was found that one-fourth of the corn stalks left standing stopped

about as much snow as when all were left. This will in many cases mean a good deal to the next crop. The added moisture will make the soil less liable to blow, and the standing stalks will check the wind a good deal, near the surface, and this also reduces the drifting. Better try leaving a few rows and see if it does not pay.

##### Grain-Growing vs Stock

The report of the Saskatchewan Grain Commission brings out the fact that it costs the farmers 55 cents a

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Does it get you 100 cents' worth? Or does a big part of it go to middlemen, who raise your price without raising the quality? Think this over. Analyze it. Compare it with my direct from factory to farm plan. Then you'll see why I can sell cheaper—why your dollar spent with Galloway is larger and gets you more. It's just the difference between my one profit plan and the old way of making your dollar pay the profit of the manufacturer, wholesaler, jobber and dealer.



You say cash is not always handy. You need a Cream Separator, Gas Engine, Manure Spreader or other farm equipment but you don't want to borrow. So you buy on credit where you can and pay fancy prices. That's now unnecessary. I have added a credit plan. It gives you the opportunity to buy on credit at factory to farm prices, on the basis of one small manufacturer's profit. 5 selling plans to pick from.

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I am known from ocean to ocean as the man who saves the farmers of America a million dollars every year. Why don't you get your share? Spend your dollar where it is divided the least number of times—where it brings YOU the greatest value. That means the Galloway method of buying from factory to farm at low prices. I save you money at every turn of the road.

**5 New Selling Plans—Cash or Credit**

Here they are! Take your choice. I save you money no matter which plan you accept. 1. Cash with order. 2. Bank deposit until you have examined the goods. 3. Part cash, part notes. 4. All notes. 5. Small sum down, balance monthly payments. Under any of these plans you have the privilege of the Galloway 30, 60, 90 days trial.

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I save you from \$50 to \$300 on a gasoline engine and guarantee my engine. Jump spark battery ignition. Starts easily even in cold weather. Water cooled. Hit and miss governor. Feather balanced flywheels. Steel crank shaft. Special carburetor. Carefully made cylinders fit snugly enough to retain gas, yet move smoothly without sticking. Gives more power at less cost, than any other. Lasts longer and gives you greater satisfaction. Made in all sizes 1 3-4 to 15 H. P.

**\$4.80 Down Buys This Galloway No. 7 Cream Separator**

Made in tremendous quantities in our modern factories, all parts interchangeable and standard, and sold to you direct from factory at wholesale prices for less money than middlemen pay for machines not as good in solid carload lots for spot cash. Gears run in bath of oil. Most scientific, cleanest skimming, most beautiful design of any cream separator ever made. The New Galloway is causing a sensation wherever seen. Don't buy a separator of any make or kind at any price until you first get our proposition.

**Small Payment Down Buys This Manure Spreader, Balance Monthly**

Low down, easy to load, light draft, only two horses. Eleven patents including famous irresistible roller feed. Steel endless apron with automatic force feed or push board. Mandi steel trucks. Spreads 4 to 25 loads per acre. Saves you \$25 to \$50. Thirty days' free trial. Conceded by men who know to be the best manure spreader value ever offered in the history of this country. You can put your horses on full gallop, slam it in gear and can't break it. Thousands in use. Don't buy a manure spreader of any make or kind at any price until you first get my proposition.

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bushel to produce a bushel of wheat, and 62 cents per bushel F. O. B. at the local market. The Commission found that the cost of producing wheat had increased 12% since 1909, and that during this time the price received by the Saskatchewan farmers decreased from eighty-one and one-fifth cents in 1909 to sixty-six and one-eighth cents in 1913.

This will be of interest to North Dakota farmers who are raising wheat. The same general tendency is likely true here too but the North Dakota, farmer is fortunately situated for stock raising. Corn and alfalfa can be grown very successfully in the state.

The census report shows a larger return per acre on the farms having stock than where only grain was raised. The stock, and especially when good types are used so that a superior product is produced, will bring good returns.

The other side of the stock raising proposition is that in producing food for the stock a rotation of crops needs to be practiced and this will result in larger yields of wheat which reduces the cost of production and makes possible making a profit on the wheat where no profit is made on the smaller yields. The rotation of crops puts the land in shape to grow bigger crops of grain, but it also puts the land in shape to produce more certain crops. The increased fertility and organic matter makes the crop less subject to unfavorable conditions.

Wheat growing being one of the pioneer crops, its acreage is being rapidly increased in the new countries, and usually at the expense of stock raising. This is true in the United States, in Canada and in South America. This means that the number of beef cattle is being reduced as the wheat average goes up.

#### **Pit Silo Information**

The pit silo is helping to solve the feed problem in parts of the western states. It is a comparatively new form of silo so that information on it is needed.

The last Farmers' Institute Monthly issued by the Extension Department of the North Dakota Experiment Station takes up the pit silo; its advantages, its construction and use. It contains many cuts which illustrate the methods of construction and ways of getting out the ensilage. Special emphasis is laid on using care not to dig the pit silo down to the water table.

C. F. Chase, Asst. Prof. of Agricultural Engineering, is the author.

One of the very important points in building the pit silo is to make a curb or ring of concrete at the surface. This should be 10 to 14 inches thick

and not less than 18 inches deep. Just dig a trench in the concrete, the soil serving as a form. Let the concrete set at least 12 hours. Then dig out the earth to a depth of 5 or 6 feet, making the walls smooth and plumb. Then plaster with concrete, one part cement to two and one-half parts sand. When this has set dig another 5 or 6 feet and plumb and plaster that.

A good deal of the work in making a pit silo can be done in the winter. Make the curb or ring when the weather is warm and dig out and plaster a few feet. It can then be covered with a load of straw, and will keep it from freezing, and the work can be finished any time during the winter.

### **REMEDIAL MEASURES FOR WHEAT PEST**

#### **Inconspicuous Insect that Causes An Annual Loss of Thousands of Bushels of Wheat Held in Control by Destruction of Breeding Places, Cultural Methods and Spraying.**

The little insect that causes an annual loss in this country of thousands of bushels of wheat and known as the "oat aphid," can scarcely be controlled when once it has gained headway. By proper precautions, however, serious outbreaks can be prevented. This insect often escapes notice but it is probably the most widely distributed of the important plant-lice which attack wheat and oats, and its depredations are only excelled by the so-called "green bug". How the oat aphid may be combated by a destruction of its breeding places, by cultural methods, and by spraying is outlined in bulletin (No. 112) shortly to be issued by the U. S. Department of Agriculture.

As the oat aphid does not ordinarily appear suddenly in great swarms as does the "green bug" it has never been considered a pest of great importance. It is easily overlooked by the casual observer, especially in the fall when it occurs at the base of the plants and on the roots. However, it is usually always present on the wheat and observations lead investigators to consider that these parasites weaken the plants and decrease the yield to an important extent, even tho they may not be conspicuous, and the decrease in yield not enough to be recognizable as in the case of the "green bug".

Pictures of the pest and detailed description of its appearance are found in the new bulletin. The adult wingless insect is about the size of a pin

head and is yellowish green to olive green in color. The winged insect has a black head, the abdomen being green and the antennae black. The eggs are laid in crevices of the bark or between the leaf bud and twig of the apple and when first deposited are pale greenish in color. They soon change, however, to a shining black and retain this color until they hatch in the spring.

#### **Life History of the Insect**

The oat aphid occurs on grains and grasses thruout the summer. The eggs are laid but once a year, in the fall. In the spring the eggs hatch, and thruout the summer there are 16 or more generations produced, all females. The last generation in the fall contains both males and females. As the weather becomes cooler some of the females seek the lower parts or roots of wheat and other plants of the grass family and here pass the winter, or the winged insects coming from the grain may seek such trees as the apple, the egg-laying females of this generation in turn depositing eggs on the twigs and branches.

Mild winters and cool springs seem most conducive to the increase of this

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pest. The oat aphid multiplies rapidly when the temperature varies between 40 degrees and 56 degrees F.

#### Destroy Breeding Place of Oat Aphid

The little wheat pest thrives best in rank-growing grain as in spots where manure piles or straw stacks have stood. These places are usually the center of infestation and the lice may be found there even during the winter. Therefore, the volunteer growth of wheat that occurs in the vicinity of straw stacks or manure piles should be plowed under or otherwise destroyed late in the fall in order to destroy the plant-lice breeding thereon. In some cases it may be desirable to destroy this vegetation even earlier; that is, before the winter wheat is planted or at least before it makes any growth above ground.

The pasturing of cattle in wheat and oat fields in Oklahoma and Texas during the late fall or early winter has proved a desirable method of destroying the breeding places of the pest.

#### Cultural Methods

As in the case of many other grain pests, crop rotation is of much importance in the control of this aphid. Wheat fields should be located as far from the previous year's grain fields as possible, and especially should they be planted some distance from standing straw stacks. It is also advisable to plant grain as far as possible from apple and other trees, which harbor the insect during the fall, winter, and spring months.

#### Spraying

Direct applications are hardly practicable in grain fields; but where only small areas are badly infested spraying with blackleaf—40 at the rate of 1 part of this insecticide to 900 parts of water, plus 1 pound of soap to each 100 gallons of spray liquid, will doubtless prove efficacious.

Another method which might be adopted in localities where the aphides freely migrate and deposit eggs on apple, is spraying such trees early in spring before the eggs hatch, preferably just previous to their hatching and while the trees are yet in a dor-

mant condition, with commercial lime-sulphur mixture at the rate of 1 part of the mixture to 8 parts of water.

The above remedial and preventive measures for this destructive parasite are all the more important because there is little hope of controlling it after it has once gained much headway and because, being so inconspicuous, it is liable to become present in great numbers before it is noticed.

#### ALFALFA

#### By the National Alfalfa Growers Association's Educational Campaign

Alfalfa is coming into its own. Never before in the history of agriculture in America has a soil product sprung into such sudden popularity after so many years of neglect.

That its present high reputation has been richly earned is the verdict of scientists as well as practical farmers who have made intelligent experiments in cultivating it. It is almost the unanimous opinion that alfalfa exceeds all other crops in yield per acre; in feeding value; as a soil enricher; as a drouth resister; as a profit producer.

#### Old Methods Condemned

For years the best brains in America have been employed on the task of directing the efforts of farmers to overcome the handicap placed upon them by the soil-robbers of former times, and to teach the descendants and imitators of those short-sighted wasters of nature's bounty that they are ignorantly and inexcusably squand-

ering their birthright and that of all the people.

That great good has been accomplished by the soil conservationists of all classes, scientific and practical, along the lines indicated is borne out by the records.

And now comes alfalfa—the one thing best calculated to help along the work of "Agricultural Redemption and Regeneration" thruout the United States.

Three states have organized Alfalfa Growers' Associations. In all sections of the country individual farmers are working out the problem of successful alfalfa cultivation to the best of their ability. They are pioneers; each in his own community a pathfinder.

Exclusive grain raising has taken the fertility from millions of acres of land until it will no longer produce grain in quantities sufficient to pay for cultivation.

Alfalfa will help restore that fertility and make it possible to raise more and better grain.

The great cattle ranges of the west have been fenced in and tens of thousands of acres have been seeded

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to grain. It has become necessary to raise beef cattle on the farms if the people are to eat beef.

Alfalfa will make it possible for farmers to feed and fatten cattle at a profit.

The more beef and dairy cattle and other animal there are on the farms the sooner will the original fertility of the soil be restored. The cultivation of alfalfa will multiply the number of cattle, sheep and hogs, as well as increase the total amount of soil products raised, thereby adding to the prosperity of the farmer. All classes of citizens will share in that prosperity.

The railroads of the country will profit by the increased freight tonnage resulting from industrial activity based on agricultural prosperity.

The iron and steel manufacturers, whose industry is called the "trade barometer," will reap their full share of the benefit.

Manufacturers of farm machinery and implements have a direct interest in any movement that promises to contribute to the prosperity of their customers, the farmers.

Manufacturers of lumber and cement know that the farms will be a better market for their products when the soil begins to yield more abundantly.

Bankers know that the "farmers' money" now on deposit in the banks, large as the total amount is, will increase to enormous proportions with the coming of the new era of farm prosperity.

Retail merchants, who sell to farmers, and jobbers who supply the retailers, will share in the good times coming with the introduction of "Alfalfa On Every Farm."

The basis of our national prosperity is the soil. Alfalfa will contribute more to soil productiveness than any other one agency.

### A Get Together Movement

The National Alfalfa Growers Association purposes to supply a pressing need by effecting a nation-wide organization with a view of conducting an Educational Campaign for the more speedy introduction of alfalfa as a staple crop on every American farm.

It will enlist the assistance of every known agency now employed in the work and it will give the widest possible publicity to alfalfa news of a general character, as well as to technical information relating to the production and marketing of the crop, regardless of whether it shall be sold as hay or as beef, pork, mutton, poultry, milk, cream, butter, cheese or eggs. It will seek the co-operation of

Every agricultural college and experiment station;

Every railroad that maintains an agricultural extension or industrial department;

The scientists who are employed by manufacturers of commercial fertilizers;

The meat packers who are interested in the more general spread of knowledge concerning animal husbandry;

The manufacturers of farm machinery and implements whose interest in the movement is too obvious to require more than a mere mention;

Local and state alfalfa growers' associations;

Individual farmers who have experimented with the plant and have succeeded in overcoming obstacles to success.

### How It Will Work

The Association will establish an Alfalfa Library into which will be collected every scrap of information obtainable on the subject. The publications of the Department of Agriculture at Washington will be secured, as well as all the literature on the subject printed by State Agricultural Colleges and experiment stations. Newspapers and magazines will be searched for information relating to all phases of the subject.

The material thus gathered will carefully be preserved and indexed for ready reference.

Using the Alfalfa Library as a basis from which to work, the Association Publicity Bureau will begin, thru the public press and its own publications, and Educational Campaign as broad as the nation, as direct and simple as plain language can make it, and packed full of enthusiasm born of honest conviction.

The Story of Alfalfa will go into the home of every tiller of the soil and he will be told what the little green plant will do for him if he will but give it an opportunity.

### Organization

The National Alfalfa Growers' Association will serve as the central organization around which all others will gather and from which they can all draw help when they need it. It will not interfere with their work at any time. It will merely strive to serve them—never to participate in or meddle with their governmental affairs.

It will use every effort in inducing alfalfa growers to get together in county and state associations for the exchange of experiences and the encouragement of others to follow their



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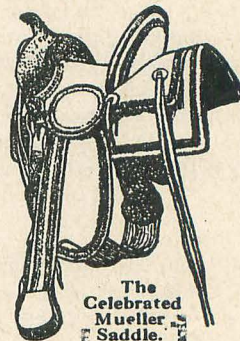
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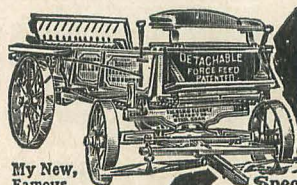
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Go where you please, look where you please, you will never find a fairer, squarer offer or a lower price on a guaranteed manure spreader. Any responsible person can get a Galloway Spreader—no money down, no bank deposit—a strictly 30-day free trial on your own farm with the money right in your own pocket. Ask for your bank reference. If high quality, low price, liberal terms mean anything to you, I can interest you. Yes sir, you can get any one of my nine different styles, put it right to work in your field for thirty days, test it any way you please, it's got to suit you or you can return it and the trial won't cost you a cent. Can you beat this offer?

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Over 40,000 Galloway Spreader owners have profited by it. So can you.

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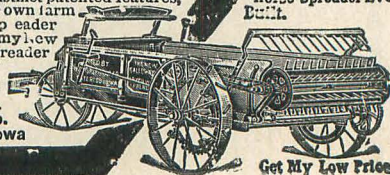
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example. It will serve as a clearing house of information for all such bodies large and small.

It will act as a lecture bureau to which application may be made for speakers whenever occasion may require.

It will prepare or assist in preparing, exhibits for state and county fairs. It will cultivate close relations with national land, dairy and livestock shows. Whenever it shall be possible to secure a hearing as an advocate of alfalfa it will put in an appearance prepared to do its work.

#### National Alfalfa Congress

Finally, the National Alfalfa Growers Association proposes to hold an Annual Alfalfa Congress and Exposition at which representatives from every state in the union will be present. The first Congress will be held at San Francisco in 1915, during the Panama-Pacific International Exposition. Space will be secured and an exhibit installed that will no doubt surprise even the alfalfa enthusiasts.

#### In Conclusion

The National Alfalfa Growers' Association has been incorporated under the laws of the State of Illinois granting charters to such bodies organized without capital stock and not for pecuniary profit.

It is prepared to receive applications for membership, which will not be confined to alfalfa growers or even to farmers, but applications will be received and accepted from any person, firm or corporation desirous of helping along this good work.

Will you be one of them?

#### AN EFFECTIVE ASSOCIATION

The United Stock Breeders' Association of Esmond, N. D. is doing very effective work in improving the livestock in Benson County. Already nineteen pure bred bulls have been brought into the county. Seventeen of these are milking shorthorns and two are Holsteins. The plan is this: Eight farmers living near together form a local club. Each one puts up \$20 which is turned into the parent association, which in turn furnishes the local club with the kind of a bull it wants. The call has, in nearly every case, been for the milking shorthorn.

One of the members of the club keeps the bull and receives \$30 a year for this. A service fee of one dollar is charged members and non-members are charged three dollars. This provides for the running expenses. When the bull has been used two or three years he is exchanged for another, in this way inbreeding is prevented. The local club must keep on using the

same breed, as the association does not believe in the mixture of breeds. Considerable improvement has already been made in the livestock of these localities.

It is the aim of the association to have four local clubs in each township of the county.

This is one of the best organizations of its kind in the state. Its method of organization is securing results. It will not be long before the cattle of Benson County will be well graded up and will have the appearance of pure breeds as well as their good qualities in production.

#### WOMAN SUFFRAGE

On November 3rd, the electors of this state, will be called upon to vote upon an amendment to the Constitution, changing it, so that the franchise or gift of voting, may be granted to women.

The law providing the right to vote on changing the Constitution provides, "This act shall not be in force until adopted by a majority of the electors of the state, voting at a general election to be held in the year 1914." Notice the reading, "until adopted by a majority of the electors voting in 1914". Notice the meaning—A ma-

jority of the electors voting in 1914 is a majority of all those voting at the general election, regardless of other issues, to illustrate: if there are 70,000 votes cast at the general election, in order to change the constitution so that women can vote, at least 35,001 votes must be in favor of the proposition.


Again if there are 70,000 votes cast, 349,99 being in favor of the change, and no votes against the change, it does not carry, as it is not a majority of the electors voting at the general election.

Those in favor of Woman Suffrage should be sure and vote for that proposition as well as voting the general election ticket. (adv.)

## Long Life Fence

Square Deal Fence is made from wire we draw in our own mills, galvanized heavily to prevent rust, built for long life from start to finish. Stay wires one-piece, tied to strand wires with the lock you see below—

ROPP'S NEW CALCULATOR



ROPP'S NEW CALCULATOR

**SQUARE DEAL FENCE**

FENCE—always stands trim and tight—is easier to put up—costs less and lasts longest.

Landowners should write for our free fence book, and receive Ropp's 160-page Calculator—the greatest time saving book ever published. Answers any business problem likely to occur. All free. Write. Keystone Steel & Wire Co., 414 Industrial St., Peoria

## These 4 Farmers Saved \$1144 on Lumber

**Saved \$175.00**

Received lumber O.K. Shipped the 10th, got here 25th. It is better than I could get here and saved about \$175, enough to build my barn.

J. E. REYNOLDS,  
Junius,  
So. Dakota

**Saved \$250.00**

The material was all better grade than local yards figured. I had enough material left for a few small sheds. You saved me at least \$250.

A. M. STERN,  
Regan,  
N. Dakota

**Got better lumber, too**

They bought direct from Hewitt-Lea-Funk Co. Through our officers, we own the forests and mills, and sell users direct, the finest of fir, red cedar, spruce, yellow pine, hemlock, etc., at very great savings.

**Write now for H.-L.-F. catalogs and prices**

**Saved \$393.60**

Lumber O. K. We had two of our lumber dealers inspecting our lumber, but they had no chance to shoot hot air into us. We saved over 40% (\$393.60.)

THOMAS SHEEHAN,  
Weaver,  
Minnesota

**Saved \$326.00**

We feel greatly indebted to you for the quality of lumber, prompt delivery and prices. The same quality lumber here would have been nearly one-half more.

J. O. JOHNSON,  
Fallon,  
Montana

**Hewitt-Lea-Funk Co.**  
Capital \$1,000,000 Not in any trust  
340 Crary Bldg., Seattle, Wash.

## For the Farmer's Wife

Would you like to have Pictorial Review in your home? This popular magazine will be sent one year together with the North Dakota Farmer one year for only \$1.10. This offer is limited. Act now.

Mention this offer and receive FREE "Ten Commandments for the Dairy Farmer"

North Dakota Farmer, - Lisbon, North Dakota



# North Dakota Farmer

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Lisbon, N. D.

**E. F. Ladd, Editor FARGO, N. D.**

**BUSINESS MANAGEMENT, LISBON, N. D.**

## ASSOCIATE EDITORS

**PROF. J. H. SHEPHERD, State Farm Notes.**

**PROF. W. B. RICHARDS, Livestock.**

**PROF. C. B. WALDRON, Fruits, Forestry,  
Insect pests.**

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**Vol. 16 | OCTOBER, 1914 No. 5**

"Credit is dangerous for those who  
do not know how to use it."

Capital may be acquired in two  
ways—by saving and by borrowing.

Dry farming viewed in its larger  
aspects is the biggest problem of the  
state.

"Borrowing should be avoided by  
shortsighted people who do not keep  
accounts and do not realize how fast  
boots wear out."

A propaganda should be started for  
standardizing the rural farm home.  
What farmer in fair circumstances will  
equip his farmstead with modern  
labor-saving equipment as a model for  
other farmers, or offer a prize for the  
farmer who will do so?

This is an exceptional season for  
practicing conservation of moisture—  
because there is plenty of moisture to  
be conserved. But like the darky's  
leaky shanty, it looks as tho it can't  
be mended when it is rainy and when  
it isn't raining, it don't need mending.

Two of the greatest blessings Nature  
has bestowed upon North Dakota are  
limited rainfall and long winters. Just  
why these two much berated condi-  
tions should, after all the criticism  
they have received, prove to be great  
blessings may not be clear to the aver-  
age citizen. Will the agricultural  
students of the state give their views  
pro and con? Really, it's worth  
while.

Soon there will be a mantle of snow  
upon the farm machinery left out upon  
the prairie. One cause of the high cost  
of living may be found in the neighbor-  
hood of that rusting and decaying ma-  
chinery. How many school houses could  
be built with the money thus wasted in  
this state alone?

While the bankers of the state are  
taking an active interest in the mat-  
ter of better farming, would it not al-  
so be a good plan for them to reduce  
the rate of interest from twelve per  
cent to eight per cent, with legal rate  
at six per cent? This sort of help  
would not only be appreciated, but it  
would demonstrate the sincerity of  
those anxious to help the farmer.

There are nearly 300 farmers' clubs  
in the state. These clubs should meet  
regularly and discuss subjects like co-  
operation, best breeds of livestock,  
crop rotation, etc., and pay large at-  
tention to the social side of rural life.  
When farmers wake up and take a  
deep interest in improving the social  
and business side of farming, great  
improvement is bound to result. In  
other words, rural life must develop  
from within or remain the servant of  
interests that take more than they are  
willing to give.

The Pure Food Board has had un-  
der consideration the question of  
whether alum baking powders are in-  
jurious to man and whether alum in  
any form added to food products is  
deleterious to health. Summarizing  
the conclusions of the Board, it has  
been determined "that alum baking  
powders are no more harmful than  
any other baking powders, but that it  
is wise to be moderate in the use of  
foods that are leavened with baking  
powder."

If a good many business and pro-  
fessional men would take as much in-  
terest in improving the business they  
are directly connected with—in cleans-  
ing their own business of crookedness  
and suspicion—as they do in giving  
advice to the farmer relative to man-  
aging his farm affairs, they would  
render the country a tremendous  
service. "Physician, heal thyself" ap-  
plies directly to them, and it would be  
some relief if they would first set  
their own house in order before de-  
voting too much time exhorting farm-  
ers how to farm.

The farmers' institute season will  
soon be here, and farmers and farm-  
ers' wives should arrange to attend  
these gatherings. A farmers' institute  
is intended to inspire rather than to  
instruct, tho an expert lecturer is

usually able to both inspire and in-  
struct. Inspiration goes a good way  
toward making improvements on the  
farm. Where a farmer really takes  
pride in his work, looks upon his call-  
ing as being dignified and desires to  
rank among the best husbandmen in  
the community, he will go about his  
work with pleasure and succeed and  
prosper where otherwise he would suc-  
ceed but indifferently. The farmers'  
institute encourages the making of  
such farmers.

The Farm Husbandry Course should  
be crowded to its limits this year, and  
every year. The Agricultural College  
offers no more popular course of study  
for boys who intend to follow farming  
for a livelihood but who cannot spare  
the time to take a four-year graduate  
course of study. As it only takes  
three years to complete the Farm  
Husbandry course, and as the years  
are short—only six months each, and  
the work comes in winter when farm  
boys generally can be spared from  
home duties—it would seem that  
parents can offer their boys nothing  
that will do them so much good and  
that costs so little as the opportunity  
to complete this course of study.  
Girls are offered a similar course, as  
to time for completion, but adapted  
for housekeeping and home-making  
instead. There should be not less  
than five hundred boys and girls annu-  
ally in these two courses of study.

## PUBLISHERS COMMENTS

It is with great pleasure that we pub-  
lish this month the excellent article  
from the North Dakota Standard on  
the work done by our editor, Prof. E.  
F. Ladd. The writer has been asso-  
ciated with Prof. Ladd for over twelve  
years, and he knows how unselfishly he  
has worked for betterment of the home  
and the preservation of health. Few  
people in the Northwest realize what  
sacrifices he has made, what hardships  
he has endured, what manhood he has  
summoned, what temptations he has re-  
sisted, that the people of North Dakota  
might be freed from the tyranny of un-  
scrupulous adulterators.

Let every reader pass this number on  
to his neighbor. Are you with us for a  
clean, reliable, scientific farm paper for  
North Dakota and the Northwest?  
There are many ways to show it. One  
is to make use of our advertising col-  
umns and mention the N. D. F. when  
writing; another way is to send us the  
names of your neighbors who are not  
subscribers; a third is to send us sug-  
gestions and criticisms.



## Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade.  
ASK YOUR GROCER FOR THEM.



### "How Delicious!"

This is the verdict of all housewives as to

### Hiawatha Canned Goods

This well-known brand represents the best that money can buy in Canned Fruits and Vegetables.

The Grocer who features Hiawatha Food Products builds both Profit and Prestige for his store.

We  
Recommend  
Hiawatha  
Foods  
FOR  
TIRED  
APPETITES



**STONE-ORDEAN-  
WELLS COMPANY**  
Eight Houses

### Our Candies Are Pure

**Chaney-Everhart Co.**  
Fargo, N. Dak.

"BUY"

"EAT"

### HOME BRAND

Pure Food Products

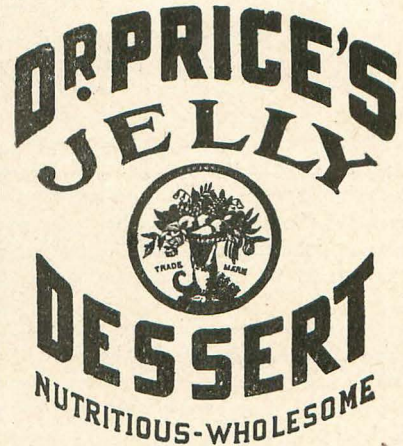
"ECONOMY" "SATISFACTION"

**Griggs, Cooper & Co.**

MANUFACTURING  
WHOLESALE  
GROCERS,

**ST. PAUL, MINN.**

Main Offices:  
CORNER THIRD AND BROADWAY



One package, 10 cents, makes  
pint of wholesome Fruit Jelly. All  
flavors from true fruits.

### MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WELCOME GUEST at every table where the HOUSEWIFE demands the BEST. THE MONARCH LABEL insures QUALITY in Coffee, Catsup, Pickles, Maple Syrup, Canned Goods or any article bearing the MONARCH BRAND of REID MURDOCH & CO CHICAGO.

## Eat North Dakota Sweet Corn

### Sanitary

PACKED BY  
ONLY  
FACTORY OF  
ITS KIND IN  
THE STATE.  
SEALED IN  
SANITARY  
CANS AT  
OUR  
MODERN  
THREE-  
STORY  
FACTORY



### Delicious

NORTH  
DAKOTA  
CORN  
EXCELS IN  
SWEETNESS.

ASK YOUR  
GROCER  
FOR OUR  
BRAND.

WRITE FOR  
PARTICU-  
LARS

**Sheyenne Valley Canning Co.**

**Lisbon, N. D.**



# Livestock Department

## FARM AND STOCK NOTES N. J. Shepherd

A pig is a runt largely because it is starved.

Whatever interferes with growth retards and diminishes egg production.

Prolificacy is an inherent characteristic that should not be overlooked.

Well bred, well selected pigs make more profit on the food consumed.

The dairy cow makes a market on the farm for the products of the farm.

The non-producers in the poultry yard eat just as much as the producers.

You must have vigor in the sow if you expect strong vitality in the pigs.

Chicks that have to scratch for a part of their living rarely ever have leg weakness.

The better the hog the less the feed costs in the production of a pound of pork.

The mature sow only requires food for maintenance while the growing one needs food for growth.

One prolific source of loss in keeping poultry follows from keeping hens that have passed the profitable age.

A bad trick in a horse which renders him an unsafe driver is as detrimental as if he is really vicious.

The usefulness of a horse depends largely upon his good health and ability to perform what is required of him.

When a farmer raises a horse himself he has much more assurance that it is equal to his requirements than if it were bought.

When sick fowls are too far gone to cure with simple treatment the sooner they are killed and their carcasses burned the better.

The man who keeps geldings or mules for his farm work secures only their labor in return, while the man

who keeps draft mares receives not only their labor but in addition to this their colts.

In making up a ration for hogs, cost must be taken into consideration, and the feed given must be such as to produce the greatest number of pounds of gain for the least expenditure.

Separating the milk on the farm gives the skim milk directly back to the livestock and thru that back to the soil, thus increasing the fertility and multiplying the salable product of the farm.

The brood mare is the most successful dual-purpose animal on the farm performing almost a full seasons work and raising practically as good a colt as tho she spent the entire year in idleness.

The percentage of fat in a cow's milk is determined by two things—first, the herd and second the individuality. The milk flow may be stimulated by feed, but the fat content cannot be regulated under normal conditions.

The colt that is handled and petted from colthood invariably makes a more trustable and consequently valuable animal than the one which is allowed to run wild so long that undesirable and even dangerous traits are often developed.

While it may seem a little expensive to feed the colt all the grain and hay he will eat, it will pay in the long run. The colt will develop into a better horse and bring a better price than the one that is fed straw and corn stalks or left to rustle for its food as best it can.

Dairying means careful methods: intensive instead of extensive farming; the enrichment instead of the impoverishment of the soil; the constant and profitable utilization of all the working forces of the farm and the using of all the materials produced on the farm creating wealth.

## A PLACE FOR SHEEP ON THE FARM

As the sheep breeding season is now opening, the United States Department of Agriculture urges the desirability of maintaining a small flock of sheep upon the farm. With proper care and attention, a flock of twenty-five or thirty ewes can be kept at very little expense, and they will prove of inestimable value in freeing the farm

from weeds, and adding something to the farm income. In addition to providing a considerable supply of delicious wholesome food for the farm table, there will be a surplus for sale, and an additional item of revenue in the form of wool.

Many farmers make a practice of buying ewes in the fall, breeding them and selling the lambs the following summer. Such ewes can be carried thru the winter on wheat and rye fields if not pastured too closely, or on clover hay with some roots and a little linseed meal. If the clover hay is not available, corn fodder may be used as roughage, in which case it should always be supplemented with bran or linseed meal. Lambs should come early and should be taught to eat as soon as they are old enough. Give lambs access to corn by providing a creep thru which they can go without allowing the ewes to follow.

Ewes can be purchased at the present time at prices ranging from \$3.00 for common, inferior sorts to \$7.00 for good fairly well-bred ewes. For farm purposes the black-faced ewes are more popular than the others, altho good results can frequently be obtained from the white-faced ones. In buying ewes, be sure that they stand well on their feet, have good straight backs and good mouths. Ewes that have broken teeth, or teeth that are badly worn down should not be bought. As a rule, a sheep has one pair of permanent incisor teeth when it is one year old; two pairs when it is two years old; and three pairs or a full mouth when it is three years old. A full-mouthed ewe, if the teeth are in good condition, can be used for breeding with good results altho she may

**A Big Surprise for You  
On Cream Separators**

**Stop! Look! Listen!**

The cream separator rush is on. Orders are piling in thick and fast. My factory is working to the limit making 35,000 separators this year. That means my price to you for one separator is based on \$5,000. It means that this is your opportunity to get the best made, nearest designed, closest skimming, easiest operating separator made at a price that has competition on the run.

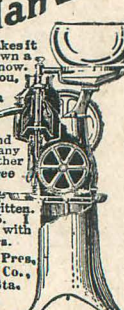
**ALLOWAY**  
New Credit Plan

Makes it easy to own a separator. Buy now, pay later. I'll trust you, if you'll trust me. Five different plans. The Galloway separator is a mechanical masterpiece. Skips closer and faster. Dust-proof enclosed gears, run in constant bath of oil. Sold on 30 days trial and I'll back it against any make at any price and let you be the judge whether it's up to claims. Dairy Manual Free

Only complete dairy book ever written. Worth \$1.25. I send it free with special offers.

**BIG CATALOG FREE**

Wm. Galloway, Pres.  
Wm. Galloway Co.,  
183 Galloway St.,  
Waterloo, Ia.



## SAFEST - SUREST - SIMPLEST way to prevent

### BLACKLEG

is by using

## BLACKLEGOIDS

Booklets descriptive of the disease and how to prevent it will be sent you free if you write for them.

**Parke, Davis & Co.**

Manufacturing Chemists  
and Biologists.

Detroit, Mich.

Dept. A14.



be as much as five years old. Never buy a ewe that has a broken mouth, that is, with teeth that have been broken off or lost.

None but a purebred ram should be used. It is not necessary to have a show animal, but a strong vigorous buck is essential. Shropshire, Oxford, Southdown, and Hampshire rams sire excellent mutton lambs and these breeds are recommended for the farm states. A suitable ram can be bought for \$8 to \$20.

The two principal drawbacks to the sheep industry in the farm states are dogs and stomach worms. The dog nuisance can be obviated to a great extent by placing dog-proof fences around the pastures. The United States Forest Service has had excellent results in protecting sheep from coyotes and wolves by building fences constructed in the following manner: A barbed wire is first stapled to the posts right on the surface of the ground. Three inches above this is placed a panel of close woven wire, 36 inches high, and above this two strands of ordinary barbed wire. Care should be taken to see that there are no openings between the ground and the lowest barbed wire. An inclosure made in this manner, into which sheep may be turned at night, is inexpensive, and the dogs will not get thru it. Most of the damage by dogs is done at night.

The presence of stomach worms is a very serious drawback. The young lambs become infested with them by eating grass to which the worms have attached themselves, the eggs being deposited by the mature sheep. It is therefore desirable to feed the lambs where the mature sheep have not run, and if possible in cases of bad infestations to keep the lambs away

from the mature sheep as much as possible.

In the farm states, the farmers will find it to their best advantage to regard the wool from the sheep as a by-product, and direct their principal attention to the production of lambs, and mutton for the table.

#### METHODS OF CALCULATING SIZE AND COST OF HOME-MADE-SILOS

Methods of calculating the proper size and cost of silos are given in a recently issued Farmers' Bulletin (No. 589), "Home-made Silos." The bulletin,

Type of Silo	Number of silos	Average capacity	Average	Average Cost per ton capacity
Concrete:		Tons.		
100 tons or less.....	71	71	\$220.47	\$3.10
101 to 200 tons.....	50	135	348.68	2.59
More than 200 tons	23	219	446.42	2.04
Total concrete.....	144	117	301.08	2.58
Modified Wisconsin.....	8	116	185.52	1.61
Stave:				
100 tons or less.....	25	63	118.40	1.87
Over 100 tons.....	16	129	187.46	1.45
Total stave.....	41	89	145.35	1.63

cin, which may be had free on application to the department, consists of 47 pages, with 37 figures and diagrams, and gives explicit directions for the home construction of concrete, stave, and modified Wisconsin silos.

attention is required to keep the structure in good condition. The chief objection to the concrete silo is its cost.

#### Cost of Silos

Recent data on the cost of home-made silos collected by the Dairy Division from all parts of the country show the following relative cost of the three types:

The second table will show the proper diameter of the silo for herds of different size to be fed different amounts for winter feeding, when 2 inches of silage are removed daily:

A 900-pound cow will ordinarily consume 30 pounds of silage a day; a 1,200-pound cow about 40 pounds.


Yearlings will eat about one-half as much as mature animals; fattening cattle, 25 to 35 pounds for each 1,000 pounds live weight. A sheep will take about one-eighth as much as a cow. Horses should be limited to 15 to 20 pounds daily.

Inside diameter of silo.	Quantity of silage in depth of 2 inches.	Number of animals that may be fed, allowing—			
		40 pounds per head.	30 pounds per head.	20 pounds per head.	15 pounds per head.
Feet.	Pounds.				
10	524	13	17	26	35
11	634	16	21	31	42
12	754	19	25	37	50
13	885	22	29	44	59
14	1,026	25	34	54	68
15	1,178	29	39	59	78
16	1,340	33	44	67	89
17	1,513	38	50	75	101
18	1,696	42	56	85	113
20	2,094	52	70	104	139

The concrete silo, says the bulletin, has the advantage of the other two in permanency and stability. A well-constructed concrete silo will last indefinitely; there is no danger of its blowing or burning down, rotting out, or being attacked by vermin. Little

pounds daily.

In general, the depth of the silo should not be less than twice nor more than three times the diameter. The greater the depth the better the silage, on account of the pressure from above. If less than 24 feet in height



## Two O.I.C. Hogs

### Weigh 2806 lbs.

Why lose profits breeding and feeding scrub hogs? Two of our O. I. C. Hogs weighed 2806 lbs. Will ship you sample pair of these famous hogs on time and give agency to first applicant. We are originators, most extensive breeders and shippers of thoroughbred hogs in the world.

**U. S. Govt. Inspected Herd**

We have bred the O. I. C. Hogs for 51 years and have never lost a hog with cholera or any other contagious disease.

**Write—Today—for Free Book  
"The Hog from Birth to Sale"**

**THE L. B. SILVER CO.**  
544 Vickers Building, Cleveland, Ohio



## CLASSIFIED ADS.

### One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

### LIVE STOCK

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amenla, N. D.

ASH GROVE FARM. Knudtson & Son, Props. Breeders of Pure Bred Percheron Horses and Short Horn Cattle, Both Sexes. Stock for Sale. Route 1 Fullerton, N. D.

J. S. BIXBY  
RED POLL CATTLE. If you want dual-purpose cattle, I have the best. Rhode Island Reds, also in stock. LISBON NORTH DAKOTA

Mulefoot Hogs are Healthy. Hardy and Prolific. Jno. Dunlap, Breeder, Williamsport, Ohio.

#### SHORT HORNS

Young stock for sale. All registered. Jim Uglum, - - - Bowbells, N. D.

Maple Lodge Large Registered Yorkshire Pigs, \$9 to \$12. Sired by Egeland Valliant weight 600 pounds.  
Bourbon Red Turkeys.....\$1.75 to \$3.  
Partridge Wyandottes, Eggs and Stock...\$1.50  
Good Winter Layers All Stock Guaranteed  
EDWARD KLEBAUM, - - - Egeland, N. D.

REGISTERED POLLED SHORTHORN CATTLE AND BOURBON RED TURKEYS.  
Some good young Bulls for Sale.  
Odessa Stock Farm, - Devils Lake, N. D.

Meadowlawn Farm. The largest breeders in North Dakota. Percheron Horses, Shorthorn Cattle, and Berkshire Hogs. Where quality counts. Address: A. H. WHITE, - - - Kramer, N. D.

For Large Yorkshires of either sex and bred gilts, address L. A. Knoke, Badger Den Stock Farm, Willow City, N. D.

Choice Poland China Hogs always on hand. Bred Gilts all sold. Register now for spring pigs, either sex, prices right. Thos. Forbes, Petersburg, N. D.

HIGH GRADE LIVESTOCK: Clydesdales, Double-standard Polled Durhams. Farm Horses and Drivers. Leal Stock Farm, - - - Leal N. D.

### PERCHERONS FOR SALE

We are offering a choice lot of young mares and stallions, all raised here on the farm and thoroughly acclimated.

WHITE BROTHERS

Valley City - - - North Dakota

### ENVILLA STOCK FARM

Envilla Stock Farm, Cogswell N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat Dogs and other breeds, Angora Cats. All varieties of chickens: turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Live Foxes, Skunks, Mink and Badgers

### MISCELLANEOUS

WANTED. Live Foxes, Skunks, Mink and Badgers, any time.  
Envilla Stock Farm, - - - Cogswell, N. D.

WANTED to hear from owner of good farm for sale. Send cash price and description.  
D. F. Bush, Minneapolis, Minn.

Lady Agents, to represent us, placing our fine collection of Perennial Flowering Plants in every City and Town, for fall planting. Address Wm. Pfander, Jr. Proprietor Pioneer Nursery, New Ulm, Minn.

FOR SALE: 45 Horse, 4 Cylinder, Eagle Traction Engine; nearly new for \$600.00.  
F. Jaskowiak, - - - Bismarck, N. D.

FILMS DEVELOPED, 10 cents (any size). Prints or Post Cards, 3 cents each. Ansco films at list price, sent post paid. One of the largest finishers in this country. Thirty years' experience.  
RITCHIE BROTHERS

Dept. 2, - - - Centralia, Ill.

GIVE GERMAN DISTEMPER REMEDY a Trial. Your money back if not satisfied.  
German Distemper Remedy Co., Goshen, Ind.

the quality ofilage will not be the bet. A very great height, however, i to be avoided on account of the excessive amount of power required to elevate the cut corn into the silo.

### SOME DAIRY HINTS

Charles Cristadoro, Pt. Loma, Cal.

#### I. THE SILO

What is a silo? Why, call it a cow's refrigerator, pantry, "grub box," so to speak, for keeping green and fresh food continuously fresh and green—or, on a human plane, keeping one's meat fresh and ready for use

#### PROTECT YOUR CALVES

Food animals, right now, mean big profits. Do not let your cattle die of blackleg. Use Blacklegoids—and use them now, before your calves get the disease. Blacklegoids are reliable, made by reliable manufacturers, and are a practical life insurance for your calves against blackleg. Your druggist can supply them. Adv.

daily instead of dried and hung in the loft.

The silo means the difference between sun-cured, dry alfalfa, corn-stalks, sorghum, white clover, cow-peas, kaffir corn, etc., etc., and the green fodder as succulent as if it were mantling the ground and was waiting to be harvested.

Credit, J. P. Morgan says, was worth more than money, in the eyes of the banker. A slippery depositor, even with a good deposit to his credit, might have considerable trouble in getting a note discounted, where a man, much less apparently financially reliable, but with a high moral credit, would be granted a discount at once. One was a hazardous risk, the other a risk the bank was willing to take.

A farmer with dairy cows and a silo, along rural credit lines, is regarded as the best kind of a farmer risk, for there is no higher grade of remunerative farming than one involving the growing of one's own feed, storing it in a silo and selling

### ST. PAUL UNION STOCKYARDS COMPANY, SOUTH ST. PAUL, MINN.

#### Comparison of Receipts and Shipments of Livestock for September, 1914

	Receipts					
	Railroad	Cattle	Calves	Hogs	Sheep	Horses
C. R. I. & P.	205	85	659	92	.....	20
C. G. W.....	1162	378	2935	1378	23	105
C M & St. P.	6082	722	8439	5300	66	407
M. & St. L....	1731	371	4969	454	.....	155
C, St P, M & O	3488	1097	8960	4163	217	326
C. B. & Q....	229	54	513	868	.....	24
M St P & S S M	12696	2181	9871	5779	.....	690
Gt. Nor.....	21996	3674	18715	75215	50	1510
Nor. Pac....	16333	1756	7439	50731	211	952
St. P. B. & T.	1	2	1	.....	.....	1
Driven In....	436	187	847	71	40	.....
Total.....	64358	10507	63348	144051	607	4190
Inc. over 1913	9980	295	.....	37081	74	420
Decrease.....	.....	.....	5951	.....	.....	.....
Average Wts.	836	215	240	80	.....	.....

Corrections—In August Statement—Receipts Sheep for month, difference 24447 should be on decrease line. Total Cars Jan. 1 to date 34752 should read 24752.

#### Shipments

C R I & P...	3032	34	.....	122	.....	89
C. G. W.....	3251	198	.....	841	41	121
C M & St P.	13218	796	9084	12023	25	614
M. & St. L....	1058	4	271	1603	10	46
C, St P, M & O	8484	303	3794	16355	10	404
C. B. & Q....	10499	21	4531	47598	183	706
M St P & S S M	1323	126	56	42651	155	213
Gt. Nor.....	2928	314	9	878	7	95
Nor. Pac.....	2434	225	140	310	34	74
St. P. B. & T.	.....	.....	.....	.....	.....	.....
Driven Out...	628	226	1609	137	183	.....
Total.....	46855	2247	19494	122518	648	2362
Inc. over 1913	5434	752	4720	45105	69	520
Decrease.....	.....	.....	.....	.....	.....	.....
Jan. 1 to date	195872	19768	281797	288006	3838	10924
Inc. over 1913	11157	387	94244	71838	355	1971
Decrease.....	.....	.....	.....	.....	.....	.....



that siloed feed in the form of milk.

Years ago the silo was regarded with suspicion by the men who manufactured condensed milk, but that prejudice has been wiped out.

If my memory serves me aright, Wisconsin is the gold mine dairying state of the union. And more silos are going in yearly. The bankers of Oklahoma who loaned the dry-farmer money did so under the proviso that he spent some of the loan on growing kaffir corn and stock. Kaffir corn was a sure crop and so was beef or milk, and the banker knew what it meant towards the soil fertility upkeep to stock and feed it on home grown produce—out of a silo.

So also is the day coming as we near a solution of the rural credits problem when no loan will be made to a farmer who keeps neither stock nor a well-filled silo on his premises. The all-grain farmer will be regarded with suspicion, considered to be a miner of his land, who, putting nothing back allows the soil fertility problem to solve itself, which it will not do.

In the early days of Minneapolis, when a man came into a bank for

a discount they did not refer to Dunn's or Bradstreet's, unknown then; they scanned his coat collar for saw dust and his hair for flour mill dust—and finding same the man's credit was established. The lumber mill and the flour mill with cheap Mississippi river power laid the cornerstones of Minneapolis prosperity.

And so with the silo and the dairy cow, the farmer harboring same can always command credit, for he is making an investment of his farm, improving it from month to month, and not running it as a mine.

To go into the reasons for a silo would be as to expounding the obvious, even so when practical farmers regard silage as cheaper than pasture. So far as the cow is concerned, it means green corn stalks etc., all thru the year, and whether a cow is fed on dry hay or corn stalks or from a silo, on green palatable fodder, means a difference in the weight of the milk pail at milking time or the cream check from the creamery.

The silo and dairy cow is the open sesame prosperity combination for the humid or dry farmer, even, from Maine to California.

## II. FEEDING THE DAIRY COW

How much and what kind of food and the balance of protein to carbohydrates depends on conditions; the weight of the cow and what she may be producing as to milk. Observation and applied brains are factors in dairying. Any man with a shed and "some cows" can become a boarder of cows, run a cow's boarding-house or be a champion "manure producer," but to really know what you are doing and make the dairy pay is advanced dairying indeed.

All kinds of general rules are laid down as to a balanced ration; for instance: for every three pounds of milk yielded by the cow one pound of grain should be included in the ration with 40 to 50 pounds of corn silage and clover or alfalfa what the cow will eat up clean.

"Cows having a balanced ration were able to consume 12.12 per cent more nutriment and to make 33.7 per cent better use of the nutriment consumed. Six and one-half cows on a one to six ration produced as much as nine cows on a one to eleven ration. Excess of carbohydrates does not make up for

**WANTED**—Responsible party to take charge of business in each county. New Automatic Combination Tool, combined wire fence stretcher, post puller, lifting jack, etc. Lifts or pulls 3 tons, weighs 24 pounds. Sells to farmers, shops, teamsters, etc. Descriptive catalogue and terms upon request. Harrah Manufacturing Co., Box M, Bloomfield, Ind.

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**For Sale** Registered Jersey Bull ten months old. If interested write W. G. WEEKS, BUCKOO, N. D.

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A Bargain in a Farm in central Missouri Near a Good R. R. Town Write

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## The Jersey



comes into maturity early, is long-lived and is often found making records even to advanced age. She stands above all other breeds for economic production. Shall we mail you free a good book on the Jersey?

THE AMERICAN JERSEY CATTLE CLUB,  
324 W. 23d St., New York City.

## ST. PAUL UNION STOCKYARDS COMPANY, SOUTH ST. PAUL, MINN.

### Comparison of Origin and Disposition of Livestock for September, 1914

Origin of Livestock		Received				
States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota....	26511	8440	45294	15687	145	1812
Wisconsin....	5190	1352	4413	5528	.....	311
Iowa.....	30	10	172	.....	206	14
Far South....	29	.....	.....	707	22	6
So. Dakota....	4138	129	4066	412	25	218
No. Dakota....	11506	421	8411	3889	3	599
Montana.....	12660	67	281	111910	206	1017
Far West.....	.....	.....	.....	5918	.....	21
Manitoba & NWT	4263	88	711	.....	.....	191
Far East.....	.....	.....	.....	.....	.....	.....
Returned.....	31	.....	.....	.....	.....	1
Totals.....	64358	10507	63348	144051	607	4190

### Disposition of Livestock

S. St. Paul P'k's	18619	6593	43805	18930	.....	.....
Cy. & St. Butch.	907	63	3346	215	.....	73
Outside Packers	1015	.....	13387	852	.....	186
Minnesota....	9331	985	565	12090	296	363
Wisconsin....	1846	132	137	2674	4	84
Iowa.....	6344	76	367	1156	.....	194
Nebraska....	234	70	.....	.....	.....	7
Kans. & M....	.....	.....	.....	.....	.....	.....
So. Dakota....	1732	124	.....	259	.....	45
Mont. & West	2283	131	.....	.....	.....	52
Far South....	38	.....	.....	.....	.....	1
Manitoba & NWT	.....	.....	.....	371	.....	2
Mich. & E. Can.	151	.....	.....	.....	107	9
Chicago.....	16044	72	471	104060	2	1102
Ills. (ex Chicago)	2767	171	.....	300	.....	101
Eastern Points	2432	.....	.....	.....	239	80
Acct. Serum Plants	.....	.....	1221	.....	.....	.....
Returned.....	31	.....	.....	.....	.....	1
Totals.....	46855	2247	19494	122518	648	2362



lack of protein."

The average cost of a heifer two years old as the government figures it, is \$61.42; made up of initial value \$7.04; feed, \$40.83; labor, \$7.81; other costs, \$13.73 and a credit of \$8.00 for manure. The cost of the food is one-half to two-thirds of the dairy game, and therefore the necessity for the proper amounts and the right kind of food. How evident, therefore, is it that a dairyman should know what his cow is eating and the cost of same, and what she is yielding in milk and the returns from same! So it may be assumed that at two years of age a heifer raised that will not call for \$60 is a loss on the first cost, not making full returns for her feed.

Prof. Washburn figured the cost of keeping a cow in Minnesota made up from three years' data was \$58 per annum and even on the basis of farm grown food it cost \$21.50 with another \$3.00 for cash feeds. And this cost of feeding with other expenses coupled with the average cow giving 4000 pounds of milk, 3.8 per cent butter fat, hardly repays the dairyman any profit for her keep. So a 4000 pound cow, "average cow" is not only a fair feeder but almost a star boarder, and she don't begin to really and appreciably pay her way for the food she eats, under a yield of six, eight or ten thousand pounds of milk per year. So it is first to secure the producing cow and then feed her so she continues to produce.

It was shown in Wisconsin that the average cow, elevated from a 175 pound butter-fat cow to a 275 pound butter-fat cow, meant a difference of \$50,000,000 annually to the state. Worth while, indeed, to buy or raise the right kind of a cow and learn to feed her right.

Protein cuts an important figure in the ration of a dairy cow and the question arises as to the cheapest source. Every 28 pounds of milk contains one pound of protein but to get that the cow must eat two pounds of protein. Corn meal at \$1.50 per 100 pounds is expensive; wheat bran at \$1.25 per 100 pounds is expensive also when compared with cotton-seed meal at \$1.65 per 100 pounds (these are eastern cost figures) which contains five times as much protein as corn meal. Cotton-seed meal is the cheapest source of protein. Clover and alfalfa hay make the best roughage and early cut hay contains more protein than late cut hay. A hundred pounds of timothy hay contains but 2.8 pounds of protein, while 100 pounds of clover contains 6.8 pounds protein.

Dairymen, use their own feed because it is raised on the farm think it economy to feed it to the stock forgetting that it is not so much what goes into the stomach of the cow that counts as what the cow digests and turns into milk. And so they feed from the farm when if they sold some and bought milk-producing feeds the results would prove far more economical. But in the absence of knowledge many things happen that should not occur. A dairy farmer outside of Chicago puts it this way:

"You would not wonder at the poor financial results obtained here if you knew how unfit a big proportion of our tenant farmers are to handle cows profitably. It is useless to tell them to read more and brighten up their minds. They never have read and it is too late now for them

to begin. The consumers in Chicago would pay a fair price mighty soon for their milk, if it was not for the production of this milk of ignorance. That is what keeps the market down and keeps the rest of us under the harrow."

The curse of any business ignorant competition.

What's the moral of it all? Mix brains with your milk, figuratively speaking, and a very large proportion of brains can be acquired, free for the asking, by sending to the U. S. Department of Agriculture at Washington and procuring the latest data on the dairy action. Read the bulletins when they come; don't throw them on the tool-shelf, but read them and apply the knowledge secured. Knowledge is power for profit—even on a dairy farm.



## Poultry Department



### THE MOLTING PERIOD IN FOWLS

O. W. Dynes, N. D. Experiment Station

Each year the hen goes thru a physiological process known as molting in which the fowl sheds the old feathers and replaces them with new. This is a very serious drain on the vitality of the laying hen. Usually they cease laying entirely during the months of October, November and December. In North Dakota, where the late fall and early winter usually furnish cold weather, it is a period of extreme hardship for farm poultry unless they are properly taken care of. The New York State College of Agriculture has made some interesting findings regarding the molting period of fowls. This may be summarized as follows:

1. The hen feathers more quickly in those areas which protect the vital parts.
2. From the incubator to the laying period, chicks experience at least four moltings, either partially or completely.
3. Hens frequently lay during the summer while partially molting but seldom during the general molting.
4. Young hens molt more quickly than older ones.
5. Hens molting very late molt in less time than those molting earlier.
6. Hens molting very late give a

higher yearly production than those molting earlier.

7. Hens lose in weight while molting.
8. Broodiness appears to retard molting.
9. Starving the hen appears to increase broodiness.
10. Hens molting early resume production more quickly after molting than those molting later.
11. Hens molting early lay more eggs during early winter than hens molting late.
12. The most prolific hens molt latest.

It is thus seen that hens which molt late are usually the heavy producers. There is a lesson in this for every poultry keeper in North Dakota. Take proper care of the hens that molt late because of the cold weather. Such hens make excellent breeders in the spring and should be properly cared for. This can be done by putting them into the house early and not allowing them to suffer from the cold winds.

The shedding of feathers is a heavy drain on the constitution of the fowl because it is necessary to manufacture a new coat. The making of new feathers can be greatly aided by feeding highly protein or meat foods. The ordinary grains like wheat, corn and oats do not contain enough protein. Meat scraps from the house or commercial beef scraps are necessary if best results are to be obtained. If a fowl is thoroly chilled and thereby



weakened by late molting during cold weather, she will find it difficult to recuperate until late winter or early spring. By giving her extra care she can be started laying much earlier in the winter.

#### Green Food for Poultry

During the late fall and early spring the addition of green food to the rations of the hens will well repay the efforts of the poultry keeper. This can be furnished in many ways. Green cut alfalfa, corn fodder, lawn clippings or clover are excellent green foods. If these are not available, roots, such as mangels or turnips, are very acceptable. Many good poultry keepers feed both. This, of course, is in addition to the regular grain rations. By using a little thought during the growing season enough of this material can be cured in a dark room or some place where light is excluded for winter consumption.

#### Early Winter Laying

Late hatched pullets rarely lay until the middle of the winter or early spring. Chickens should be hatched in April or May if they are expected to furnish eggs in the late fall or early winter. The season in North Dakota is quite short and it is often difficult to get fully matured pullets before winter sets in. This can be done, however, by early hatching and proper feeding of the pullets during the later summer and early fall. If the pullets do not receive their proper growth by the first of November and show signs of laying it is doubtful whether they will lay to any extent until the following spring. The cockerels should be separated from the pullets as soon as possible thus giving pullets plenty

of opportunity to develop size. If they are allowed to mix indiscriminately with the old hens and cockerels they are liable to be stunted in growth as it is impossible for them to get their proper allowance of food. Keeping them out on the range separated from the rest of the flock is the best method of handling them.

#### THE COLOR OF THE YOLK

The color of the yolk of the egg seems often to be affected very noticeable by a change in the food. When fowls are closely confined, in winter or summer, it often happens, especially if a ration is deficient in green food, that the yolks are pale colored. Professor Wheeler says a change in the amount of meat or fresh bones does not always seem to have much influence. He says he has known hens that had the run of a barn and barnyard, to lay eggs with much darker colored yolks than did neighboring hens confined but fed better in most respects. In one instance, a much deeper orange color in the yolk followed a change in feeding to green clover and alfalfa. One lot where pale colored yolks were the rule, laid eggs with orange colored yolks after they had been given the run of a barn floor covered with dry clover, chaff and leaves. A change in color of butter is often noticeable in the same way when cows are turned to pasture after dry feed. Clover hay and corn stover make different colored butter. Clover hay or alfalfa hay is good to feed hens when the fresh fodder cannot be had, and may help to bring about the desired change. There is no doubt that the same cause which affects the color of butter in winter, also affects the color of the yolk of the egg. We produce a whiter flesh and whiter fat in our fowls when we feed wheat and barley than when corn and grass is given. Professor Cushman believes that the color of the yolks of eggs is affected in the same way. Eggs from varieties of fowls that lay but few, he says, are richer than those from breeds which lay large numbers of eggs. They are, at least, usually deeper in color. The first eggs of a White Leghorn pullet laid in the fall, have as yellow yolks as those of any breed; but after she

has laid 100 or more eggs, they have become considerably lighter, and both the yolks and whites become thinner and more watery as the winter advances. This change may be prevented, to a considerable extent, by providing an abundance of good rich in egg-producing material. Beef scrap or cooked meat and corn should be given as well as wheat and plenty of good clover or second crop hay to take the place of green grass.

#### PRACTICAL POULTRY SUBJECTS Michael K. Boyer

##### Small vs Large Flocks

It naturally is the ambition of the average beginner to want to at once get on top of the heap. He sees no reason why he cannot immediately establish a good income with poultry farming, and the way he figures out results is really astonishing. He reasons that if he can get a certain profit 50 hens he surely can make it ten times greater on 500. He forgets that in the case of 50 fowls he had plenty of time to supply all their wants, and that they received a greater variety of food than would be possible to give a flock ten times greater. The table scraps alone, in the feeding of 50 fowls, is an item that cannot be overlooked, and which in all probability contributed more to the results than anything else.

In a small flock, an ailing fowl is more quickly discerned than it would be in a large flock, for the reason that the keeper has more time to carefully inspect. In a flock of 500, the attendant must hurry on with his work of feeding and watering, and cleaning up, and he at times only mechanically glances at his stock.

Large flocks necessitate the employment of extra labor, and the "hired help" question is a serious one on a poultry farm. It is difficult to secure a man that will take the same interest in the flocks that one would himself. The hired man is working more for wages than he is for the success of the plant.

Moral: Begin small, grow gradually and stop growing when the capacity is reached. If help must be employed, assign some particular work to it, but let the real management be in the hands of the person financially interested. It is the only way to make a large poultry farm pay.

## PETERSON'S Barred Rocks

### SWEEP FARGO CLEAN

Of all First and Special prizes. Once again my Barred Rocks prove their superiority at the North Dakota State Show at Fargo, Jan. 1914, by winning as follows:

1st, 2nd, 3rd Cock; 1st, 3rd, 4th Hen.  
1st, 2nd, 3rd, 4th Cockerel.

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### QUALITY—UTILITY—EXHIBITION

Single Comb Rhode Island Reds, Barred Plymouth Rocks, White Plymouth Rocks, Light Brahmas, Buff Wyandottes.

BIRDS OF HIGHEST QUALITY: Winners in the following shows 1913: Minneapolis and St. Paul, Minn., Fargo & Valley City, N. D. Mating list free. WOLVERTON, ROUTE 1, MINN.

#### English and American Methods Compared

An English journal says that when they have a look at the average English farmer's egg basket, and a continental egg box, there is much to be seen and learned therefrom.



In the farmer's basket will be found eggs of all sizes, shapes, tints and colors. There has been no attempt at grading or uniformity. If a farmer gets an even lot of eggs, all brown, he can sell them at 14 for 23 cents (a shilling); but he would have to sell 15 eggs of his jumbled up lot for the same price. The continental eggs are all evenly and securely packed, all of one color, and graded according to size.

The condition of the English farmer's egg basket is very much like the egg basket of the American farmer. There is a reason for it. So long as the farmer will continue to harbor mongrel poultry, he is sure to have all colors and sizes of eggs. Nothing but a well selected and well-bred strain of a single breed will give the desired uniformity.

While on the subject of English poultry, it might be interesting to know the methods in that country for killing and dressing fowls for market.

There are two or three methods employed by poulterers for killing their stock: one by neck stretching, by which the fowl is seized by the hocks, the finger and thumb of the free hand being placed on the poll, and the neck stretched until the spinal cord is ruptured. Death is instantaneous, as well as painless, and the blood flows down into the cavity of the neck.

On the other hand, there is a prejudice against the retention of the blood. If this must be drawn, there are two methods. One is to catch the bird, hold it firmly between one's knees, then stun it, and thrust a knife thru behind the ear. This severs the large blood vessels, and soon all is over, but the feathers are apt to become soiled.

The other method is to secure the fowl as above, stun it by means of a smart tap at the base of the skull, then open its beak and thrust a sharp knife down its throat and withdraw it rapidly by pressing the keen edge against the back of the throat. This also severs the blood vessels, and the blood draining by way of the mouth is more cleanly.

The beak is then rinsed, and the legs scrubbed with a stiff brush and soapy water, which makes them bright and clean for sample trussing for market. The feathers are then removed.

The English poulterer fixes up his dressed poultry according to the individual order. If the order says trussed or shaped, they are not generally drawn, but are plucked and neatly tied down.

If the order reads "dressed for the spit" the birds are plucked clean, the

legs scalded or trimmed, and the bird drawn and skinned fit for the cook to insert the seasoning and put it before the fire.

There was at one time a fashion in England for killing chickens at 4 to 6 weeks old, to be served as "petit plussins," the same age and plan by which the squab-broiler is now in fashion in America. The fashion is gradually dying out in England, and already showing a decline in this country.

What we here in America call a broiler—a chicken from 12 to 14 weeks old—England calls a spring chicken. Later on the English put up cockerels for fattening at from four and one-half months onward; those really intended for killing are kept at a loss beyond six months, as they make little more size for their feed.

The question is often debated, when should the laying hens be killed and marketed? The best time of the year to kill off these old hens is July, just before they begin to lose condition thru molting. The average age of the hen that is about declining in her egg-laying qualities is when she is two and one-half years old. But as a hen at that age is inclined to be tough, they should be sold only as stewing or boiling stock. Where it is intended to sell hens for roasting, they had better be killed at one and one-half years old, at which age they will not only secure a better price, but they have had a chance to lay from 100 to 150 eggs before sent to the block. Of course it is not advisable to kill any good breeding stock at this age, for we secure some of our best and most rugged stock from mothers that are two years and more of age.

#### Facts About Eggs

Double-yolked eggs are the result of overfat, or a diseased ovary: Pigeon-sized eggs are traced to the same cause. So are badly shaped eggs—those that are round, or have heavy ridges. Eggs are colored by a pigment, which, it seems, does not exist in all fowls. The first eggs of winter are generally larger than those laid at the close of the summer season. The older the hen the larger will be her average sized egg. The flavor of the egg is influenced by feed. The eggs from hens that are not mated will never rot, and will remain in a fresh condition twice as long as eggs from mated hens. The shell of the egg being porous, it will quickly absorb odors and these will affect the flavor. The size of eggs cannot be foretold, not one of the old-time theories in this particular having been proved.

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S. C. White Leghorn Cock-  
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And prize-winning strain. Barred Plymouth Rocks, White Orpington Indian Runner Ducks; Silver Spangled Hamburgs—Single Comb White and Brown Leghorns. Stock and Eggs at Reduced prices.

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Single Comb White Leghorns, White Wyandottes. Pullets or cockerels, \$1 each. Fawn and White Indian Runner Ducks, \$2 per bird, \$5 per trio. Mammoth Bronze Turkeys. Hens \$3, Toms \$4.

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Rose Comb Red Cockerels for \$1.50; and Fawn and White Indian Runners, \$2.50 per pair, if taken now.

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White and Columbian Wyandottes. Light Brahmas, and S. C. White Leghorns. Over 30 years a breeder. Stock and eggs for sale. Michael K. Boyer, Box 27, Hamonton, New Jersey.

White Rock and Columbia Wyandottes and Buff Orpingtons. Stock and Hatching Eggs in Season. O. A. Barton, Valley City, N. D.

Latta's S. C. Rhode Island Reds. First Prize Winners wherever shown. Stock and Eggs for Sale. J. G. Latta, Wheatland, N. D.

Plum Grove Stock and Poultry Farm. Breeders of Red Polled Cattle, R. C. White Leghorns and Buff Wyandottes. Stock and Eggs for Sale. V. E. GRANT, Prop., Cuba, N. D.

FOR SALE: Pure bred Barred Plymouth Rock Cockerels and Mammoth Bronze Turkeys. Fine stock—Prices reasonable—Order early. Eggs in season. J. MAGNUSON, R. 3 Box 19 EDINBURG, N. D.

EGGS FROM BUFF ORPINGTONS AND S. C. RHODE ISLAND REDS at special low prices. Bred to lay. F. M. PEZALLA, Cayuga, N. D.

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Hillsboro, - North Dakota

WHITE WYANDOTTES. If you want eggs from an early maturing, heavy laying, prize winning strain of White Wyandottes write me. I am developing a special laying strain by use of the trap nest. Prices reasonable. Write  
M. C. JAMES, Valley City, N. D.

Silver Campines and Buff Wyandottes. Great layers of large white eggs. Eggs and young stock for sale in season. E. K. Myhre, Valley City, N. D.

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Ruraldale, N. D.

My dear Miss Leader:

After being so gracefully introduced to you last month by our mutual friend, "Uncle Will," I am approaching with some trepidation, the task of advising you in regard to various matters connected with the teaching of agriculture in the country school. A teacher cannot help being impressed more and more as time goes by, with a sense of his responsibilities and opportunities, especially if it has to do with pupils at the formative period. So strong is this feeling with me, that I wonder if I am worthy enough and well enough qualified to undertake it. But since our good friend, Professor Randlett is overburdened with other work, I shall try, with your help and co-operation, to be of some service to you in your teaching.

By "your help and co-operation," I mean exactly what I say. I wish you to feel perfectly free to write to me personally or thru the columns of the North Dakota Farmer for any help or advice of which you may feel the need. There are many questions arising daily which puzzle all of us, and some one else's experience may prove just as valuable as our own and much less costly. Now by this invitation, I do not mean that I guarantee to answer satisfactorily every question that I may be asked; that would be absurd, but I promise to do my best and "run no bluffs." In this connection I think it would be a good plan to organize a question box in our School and Home Department. Then others could get the benefit of your questions. However, if you prefer to write me direct, you may do so and I shall be glad to help as I can.

Last year at this time, Professor Randlett told you about the different varieties of corn suitable for North Dakota conditions mentioned in the course of study. There are, perhaps, two varieties on the list which are at present not grown to any great extent here. They are Minnesota King and King Phillip. The latter is interesting, however, on account of its alleged historical associations. It is said that at the time of King Phillip's War in colonial times, the Indians were raising this very same yellow variety of flint corn. Then two varieties might be added to the list, Minnesota 23, which is a yellow dent

with a white cap to the kernel and having a pale red cob. Rustler's White is a dent corn having good proportions and well shaped kernels but somewhat later than Golden Dent or Minnesota 13. It is grown to the greatest extent in the southeast corner of the state.

I wish to call your attention to the value of having a permanent supply of illustrative material and apparatus. If you cannot prevail upon your director to buy it for you, your teaching capital would be greatly increased by yourself owning material helpful in the elementary sciences. In this connection, I am thinking of a set of corn samples illustrating varieties adapted to our conditions and put up in very good shape by the Minnesota Experiment Station at St. Anthony Park. It is a set of ears, one of each variety in a glass front case and suitable for hanging on the wall of the school room, where it should add materially to the attractiveness of the school room. The title is "Varieties of Corn adapted to Northern Minnesota." Write to the Minnesota station for the bulletin telling of their illustrative material for secondary school agriculture.

It will be well, in teaching corn, to emphasize the superiority of ears having a nearly cylindrical shape, a small cob in proportion the size of the kernels attached, well filled butts and tips, a kernel shape which allows adjoining kernels to touch from crown to tip, and not too large or long an ear. The weight of the shelled corn divided into the weight of the corn in ear should give a percent greater than 80.

Now, in your eighth grade work, you will be studying farm equipment and economy. I think it would be well to particularly emphasize the importance of the following in this work: paint for the buildings, oil for the machinery, a judicious use of the mower and scythe in fence corners and around the buildings, and a home work shop which includes a forge, some blacksmith tools and some well-conditioned carpenters tools.

As to paint; there is nothing that I know of which will help out the looks of the farmstead so much, making it more salable, and do more to lengthen the life of the buildings, as the expenditure of a few dollars in paint.

I would not minimize in the least the importance of housing machinery,

but I want to quote Professor Warren of Cornell University: "For every machine that is ruined by exposure, two are probably spoiled by not being properly oiled or not having the bolts kept tight."

Our farmstead should be kept clean and neat. The use of the mower and scythe around the buildings, and in the orchard, or grove will help immensely in giving the home place a habitable appearance. Some of the rainy days can be well spent in tidying up the place and repairing things which should add to its attractiveness.

We very often underestimate the value of a set of tools in good condition. They may be few in number but quality and good condition should be insisted upon. I have seen things which were by courtesy called "tools" and which were practically useless on account of their being so rusty and dull. Probably it would be cheaper to get a job done in town, if one were not compelled to spend valuable time going and coming, and in the meantime laying off expensive help. Consequently a farmer's boy should be able to use the simple blacksmith and carpenter tools and to keep them in good condition.

Minnesota Bulletin 117, gives an interesting table showing the rate of depreciation of the various farm implements. This depreciation can be lessened by good care and increased by poor. I will give the table:

Machine	Depreciation
Threshing outfit.....	\$12.00
Hay loaders.....	11.78
Manure spreaders.....	11.67
Corn binders.....	10.03
Harrows.....	8.72
Sulky plows.....	8.42
Reapers.....	8.13
Grain binders.....	7.91
Mowers.....	7.80
Hay racks.....	7.76
Gang plows.....	7.40
Gasoline engines.....	7.25
Corn cultivators.....	7.25
Corn planters.....	7.15
Grain drills and seeders.....	6.75
Harness (heavy).....	6.17
Walking plows.....	6.09
Sleds.....	5.81
Horse weeders.....	5.71
Disks.....	5.18
Wagons.....	4.89
Hay tedders.....	4.84
Fanning mills.....	4.58
Grain tanks.....	3.47

For farmstead plans and some other exceedingly interesting material relating to the subject, let me refer you to a bulletin gotten out by the Minnesota station (number 125) as well as by the Bureau of Plant Industry,



United States Department of Agriculture (number 236). Send for it.

Now if I can be of further service to you let me hear from you.

Yours sincerely,

MERRITT N. POPE.

### CONCRETE SEPTIC TANKS

#### A New Sewage Disposal System for Country and Suburban Houses

The well-managed farm of today means many household conveniences as well as labor-saving farm machinery. Back-breaking drudgery has been largely eliminated from both house and fields. Running water and the kitchen sink and bathroom have supplanted the old-time and open, unsanitary drainage. But the most efficient disposal of sewage remained a problem until the concrete septic tank was invented. It is a simple, cheap and effective device, rapidly supplanting the drywell, with its constant menace of water pollution. In brief, there has come to the farmer his own little sewerage plant in concrete, which answers his purpose even better than large city works, for he has neither the tax nor repairs that always attach to a city sewer system.

The principle upon which the concrete septic tank operates is extremely interesting. It consists of a long, water-tight cistern, thru which sewage passes very slowly and evenly. Located underground, it is warm and dark, thus affording perfect conditions for the development of the bacteria or germs which clarify and render harmless the sewage. After passing thru the septic tank, the sewage is practically free from all suspended matter and has the appearance of water. From the septic tank this clear effluent is discharged into three lines of ordinary farm drain tile.

#### Size and Location of Tank

While the odor from a septic tank is scarcely noticeable, it is nevertheless best to locate it at some distance from the house. Choose a spot easy to excavate so that the top of the

tank can be sunk 6 inches below ground level and where the lines of drain tile will have sufficient fall to carry off the discharged fluid. The tank should be large enough to hold the entire sewage for one day. For a family of eight to ten people occupying a house having two bathrooms fitted with the customary appliances in the way of tubs and stationary washstands and downstairs the kitchen sink, a concrete tank having two compartments, each 4 feet long by 4 feet wide by 4 feet high, will be required.

in Fig. 1. The holes should be 4 inches from the top of the box form, measuring from the top of the hole. The concrete should be mixed in the proportion of 1 part Portland cement, 2 parts sand and 4 parts crushed rock or gravel. Place a 4-inch thickness of concrete in the bottom of the pit to form the floor of the tank. On top of this concrete set the box forms, which should be ready for immediate use. Place the forms so that there is a space of 6 inches between them and an 8-inch space between them and the

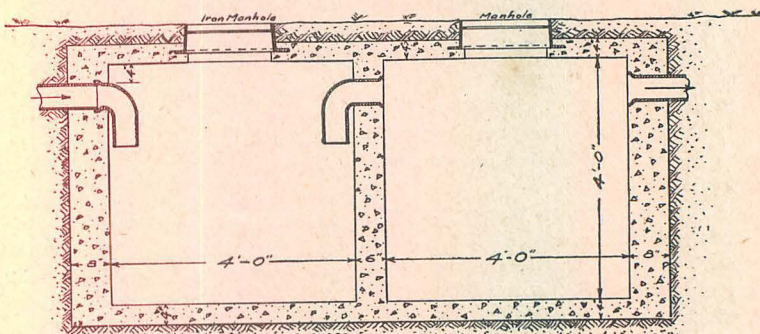


Fig. 1.—Cross Section Indicating Location of Pipes.

Since the top and bottom are each 4 inches thick and the top of the tank is 6 inches below ground level, dig the pit 5 feet 2 inches in depth. The walls of the tank are 8 inches thick and the partition between the two compartments 6 inches. Therefore, the length of the pit should be 9 feet 10 inches and the width 5 feet 4 inches.

earthen walls of the pit. Then commence depositing the concrete for the walls and partition. As soon as the level of the concrete reaches the holes in the forms place in the holes 6-inch pipes as illustrated. Then continue the concreting until even with the top of the forms.

#### Re-inforced Top and Manholes

Two ordinary iron manhole frames

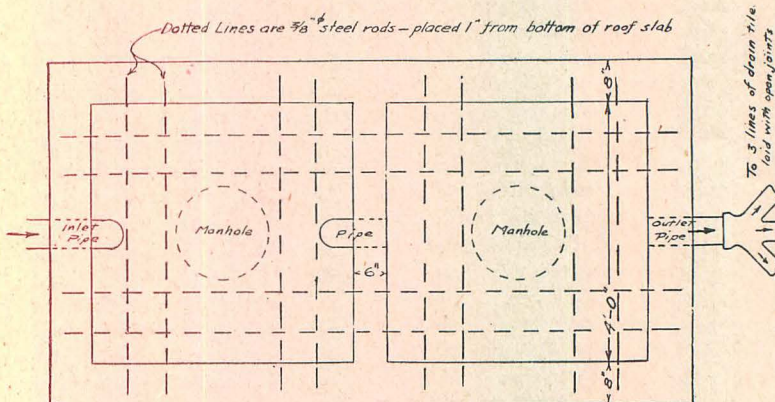



Fig. 2.—Plan Showing Proper Position of Reinforcing Rods.

#### Making Forms and Placing Concrete

If the earthen walls of the pit stand firm only inside forms will be needed. These inside forms are merely boxes made of 1-inch boards. Two boxes will be required to make two compartments. The outside dimensions of the boxes should be 4 feet square by 4 feet high. The boxes or forms will be placed on the freshly laid concrete floor. Holes for taking 6-inch pipe should be made in the boxes as shown

and covers may be obtained from a local dealer in building supplies. The manhole covers should fit tightly and should not be perforated. The manhole frames should be 10 inches high so that when placed on top of the forms the upper edge will be even with ground level. If the manhole frame is of less height than this, it should rest on a circular piece of 1-inch board, which is nailed to the top of the form. Since the concrete roof is to be self-supporting, it will be neces-



## WRITE ME!

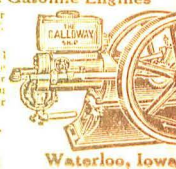
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sary to re-inforce it with a few lengths of three-eighths inch round steel rods. There will be needed 4 pieces of three-eighths inch rods, 9 feet 6 inches long, and 8 pieces 5 feet long. The roof is now ready to be placed. Place the manhole frames in proper position on top of the form, and deposit the concrete to a depth of 1 inch and on the concrete lay the long and short bars as shown in Fig. 2. When the bars are placed, deposit the balance of the concrete so as to bring the roof to a total thickness of 4 inches. As it will be covered with earth it is not necessary to give this top surface a smooth finish, merely level the surface by striking off with a straight piece of board. The tank should now be allowed to rest undisturbed for at least 2 weeks. At the expiration of this time, saw away wooden top of the forms inside of the manhole frames. Then enter the tank and remove the wooden forms, passing the lumber out the manhole opening. While in the tank make certain that the pipes are all unobstructed and not even partially clogged with dirt or lumber. The inlet pipe is then connected to the pipe from the house and the outlet pipe joined to three lines of 3-inch concrete drain tile. The drain tile will be laid about 12 inches below the surface of the ground and the joints left open, that is to say, no mortar must be used in the joints. This permits the discharged fluids to be absorbed by the surrounding soil. The drain tile lines should be laid in the form of the letter "Y" and sufficiently extended to cover a large area of ground. Average conditions require that each arm be about 100 feet long. After this is done, cover the tank with earth to the level of the manhole covers. It is now ready for use.

It is sometimes the custom to plant a few shrubs around the manhole openings, thus effectually hiding all evidence of the tank.

#### Materials Necessary

A tank of the size specified will require about 4 cubic yards of crushed rock, 2 cubic yards of sand and 7 barrels of Portland cement. There

will also be needed 78 feet of three-eighths inch round steel rods, which can be obtained from the local blacksmith or hardware dealer. The tank can be built without skilled labor. It requires but few tools and construction methods are so simple that one man can easily build it.

#### MEMORIAL TO THE PIONEER SETTLER'S WIFE

Charles Cristadoro, in "Foster's Travel Magazine"

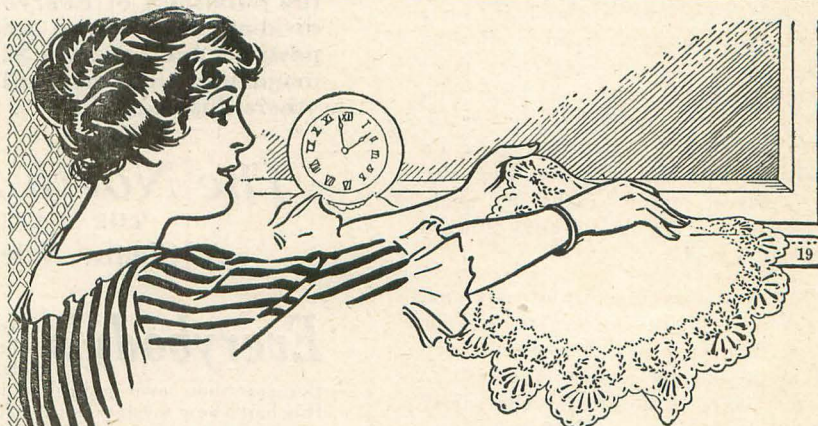
There are memorials and yet more memorials over the civilized world, from the day of Phidias to date, and where, among the many, is there a single recognition to the memory of the woman, of any age, who went into the wilderness of forest or prairie, and with her pioneer settler husband helped to tame it and smooth the pathway of coming civilization?

We certainly have no memorial in the United States today in honor of

the Pioneer Settler's Wife. Without that heroine and martyr to duty, the taming of the North, East, South or West never could have been accomplished in the incredible short space of years.

Let us go back to the days of the Mayflower; there were then pioneer women indeed. As some one tersely put it, they "endured all the Pilgrim Fathers endured, and endured the Pilgrim Fathers besides." Surely some credit is due the Pioneer Settler's Wife of the Mayflower days and of those that followed. Let us take the more modern pioneer settler, Col. Daniel Boone, who had a wife, and let us hold her up as a type of the real pioneer settler's wife and see whether she endured or not—and if justice were meted out, memorial credit, if she, too, should not stand in "imperishable bronze" close up by her immortalized husband.

Rebecca Bryan Boone. Let us note her history, even meagre as it may be. Daniel was a young man when he



**A**LMOST every housewife owns some very fine laces, linens, draperies, etc., which she uses only on "state" occasions.

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**WESTLAND EDUCATOR, Lisbon N. D.**



married her in North Carolina, and if a husband could be called roving, Daniel deserved that title. He is captured by Indians and escapes, and he's captured once more, and again escapes, and yet again. Then Boone tells Rebecca that Kentucky will prove an Eldorado, and they make the move, only to be driven back by bloodthirsty savages into Virginia. When she was settled in Virginia, Boone left her to go into Kentucky, surveying and fighting hostile Indians. Rebecca got along somehow, the best she could—a way with those pioneer settlers' wives. In due course Boone removed his family to Boonesborough, Ky. The "city" was stockaded and Indians were on the warpath. Boone is again captured by the Indians and taken to Detroit. Again Rebecca does the best she can for herself and children, "runs the farm," and the Lord only knows how she did get along. This time, hearing nothing from Boone, she gives him up for dead, and longing for the home of her own people in North Carolina, takes her children and somehow and in some way avoids the savages, and following the trail, such as it was, once more arrives among her kith and kin. Boone was not dead by any means, and after many vicissitudes, again turns up in North Carolina, and with the pioneer spirit unabated, again starts out with his family toward Boonesborough.

But it was ever a case of move on, move on, for Boone lost title to his farm; the farm was broken up and again the Boones were on the trail to make a new "home in the wilderness" of Missouri. This was a Spanish possession, and again he lost his property and Rebecca had to gather the lares et penates together and move on.

A dozen lives of Daniel Boone have been written, but no life has been written of Rebecca Bryan Boone, and if his life was full of incident, how much more so was that of his wife. He had the excitement of life, warring and circumventing the Indians, the exhilaration of the fray and all the rest, but with Mrs. Boone there was nothing of this. Just plain duty and hardship, privation, excruciating uncertainty, an incessant situation of the worst to come on the morrow, no matter how bad it may have been today. Can one imagine a life of greater toil, trial and suffering? Patience and fortitude personified. Was Rebecca Bryan Boone a factor in the pioneering and settling of Kentucky or not? If unstinted credit be given to Daniel Boone, does not the wife come in for her share of credit?

Rebecca Bryan Boone was just a type of the pioneer settler's wife. We have had thousands upon thousands of them. The wooded wilderness and the billowy prairie, if they could speak today, would unfold a

tale of martyrdom to duty that would emblazon the pages of history as the deeds of no general could, and yet not a marble or bronze has been erected to her memory. Does she deserve a memorial? Should not a befitting

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statue be erected to her and her type, the pioneer settler's wife, and with it a real hall of fame, erected in Washington, where all could see it, and in the Hall of Fame be grouped the effigies in marble of the pioneer settlers' wives of each State, to be an inspiration to all who may come and see?

The Daughters of the Revolution well might take this meritorious plan in hand and carry it thru to a successful conclusion. For is not the pioneer settler's wife the mother, the grandmother, the great grandmother of the American man and woman whose ancestry goes back to the days of the Revolution and beyond?

## FARM INFORMATION SERVICE

### A Girls' Sewing Contest

The Extension Department of the North Dakota Experiment Station has arranged a sewing contest for the girls of the state. The plan is to have the entries judged in the counties first and then to send the five best to the Experiment Station to be judged for the state prizes.

The contest has been outlined as follows:

#### Group I. Girls under Fourteen

Articles: Cooking-outfit, apron machine made; sleeves and cap, hand-made.

Materials: White cambric.

#### Group II. Girls Fourteen to Eighteen

Articles: White petticoat with ruffles, machine-made; corset-cover, hand-made.

Material: Long Cloth.

Patterns:

- Butterick: Cooking-Outfit, 6187 (10 or 12 yrs.); Petticoat, 6728 (14 or 15 yrs.); Corset-Cover, 6657 (15 or 17 yrs.)

Ladies' Home Journal: Cooking-Outfit, 8249 (32 bust); Petticoat, 8428, (22 or 24 bust); Corset-Cover, 6421 (32 or 34 bust).

Pictorial Review: Cooking-Outfit, 5372 (10 or 12 yrs.); Petticoat, 4092 (14 or 16 yrs.); Corset-Cover, 3706 (32 or 34 bust).

New Idea: Cooking-Outfit, 7294 (10 or 12 yrs.); Petticoat, 7006 (14 or 16 yrs.); Corset-Cover, 6291 (32 or 34 bust).

Standard: Petticoat, 7560 (22 or 24 waist); Corset-Cover, 6450 (32 or 34 bust).

### Rules Governing Contest

1. Each contestant must do all the work herself.

2. Each contestant must attach to finished article a slip showing cost of

same, itemizing each material used and including labor for Group I. at ten cents an hour, for Group II, at twelve and a half cents an hour.

3. Each county may have ten entries, five from each group, in the final contest to be held in conjunction with the Boys' and Girls' Institute at Fargo, December, 1914. All garments must be at the College by December 15.

4. All girls under eighteen are eligible to enter the contest whether members or not of the Boys' and Girls' Institute.

### Score Card

1. Structure.	
Accuracy of cutting.....	10
Width and evenness in size of seams, hems, bands and gathers.....	20
2. Stitches.	
Evenness.....	10
Size.....	10
Durability.....	20
3. Finish.	
Appearance on wrong side.....	5
Fastening of threads.....	5
Buttons and button-holes, or hooks and eyes.....	5
4. Appearance.	
Cleanliness of work.....	5
Suitability of material.....	5
Pressing.....	5
Total.....	100

### Premiums

Arrangements will be made for three premiums in each group.

## A SCHOOL NURSERY

"The North Dakota State School of Forestry at Bottineau, is endeavoring to co-operate with the schools of the state, in the improving of the school grounds. The school is ready to help in the planning of the grounds and will furnish tree seeds so that each school may have its own tree nursery, if it so desires. There are many reasons why a school nursery is better, under the North Dakota conditions, than the ordinary type of school gardens. Besides furnishing seeds, the school will furnish seedling trees of various kinds suitable for planting as windbreaks, shelters and also for ornamental planting. A few vines are also available.

Application blanks will be furnished to anyone asking for them."

Very truly yours,

FRED W. SMITH  
State Forester.

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## SMITH-LEVER ACT AN EDUCATIONAL MEASURE

### No Government Funds Provided For Grants to Individuals

Many letters are being received by the U. S. Department of Agriculture which indicate that farm women in various sections of the country have come to believe that the Government is about to assist them with grants of money to individuals. This unfortunate mistake which, it is feared, will be the cause of considerable disappointment, appears to have arisen thru a misunderstanding of the Smith-Lever Act recently passed by Congress. Under this act funds contributed both by the Federal and State governments are made available for practical demonstration work in agriculture and home economics. Experts from the Agricultural Colleges and county agents, both men and women, are to show farmers and farm women the value of modern methods in agriculture and housekeeping, and demonstrate the use of labor-saving devices. The purposes of the act are thus entirely educational; and there are no provisions whatever for direct financial assistance.

This demonstration work which the Smith-Lever Act is designed to promote has already met with considerable success in the states where it has been started, but the additional funds now available will greatly increase its efficiency. To avail themselves of the full of its possibilities the Department officials recommend that farm women form local clubs and then communicate with the county agent or the State Agricultural College. In this way it will often be possible to secure a visit from the county agent or from the home economics expert.

## POULTRY MARKETING

### How to Ship—When to Ship—What the Market Wants—Correct Dressing Instructions.

Prepared by the R. E. Cobb Company, St. Paul, Minn.

In the first place, be sure and shut up your poultry for a week or ten days before you make shipment to market. It is not necessary to have any elaborate facilities for confining and fattening the poultry. Turkeys will do fine if shut up in an unused shed and given all they will eat. Chickens, ducks and geese, should be shut up by themselves in a light place, and fed heavily and regularly. Most any kind of a shed will do to shut up the poultry in, providing it is dry, light and clean.

It will pay you extremely well to confine all poultry for a week or ten

days before marketing. They not only gain considerable in weight, but improve in appearance and quality. Be sure your poultry is in prime condition before shipping. Remember, thin, poor or undersized poultry is not wanted except at a loss. Buyers on the market require fat, heavy, meaty poultry, where they have to pay the top market prices. Among the best breeds of fowl to raise for market purposes, are Plymouth Rocks, Wyandottes, and Rhode Island Reds; in fact, any large breed. Leghorn fowls or any other Mediterranean breed dress out light, and are not wanted by the best trade in the large markets. White Pekin ducks are generally conceded to be the best breed to be raised for market purposes. They grow to a good size, and dress out clean. Black and dark colored ducks do not show up so well after they are dressed, as the light ones. Most any breed of geese are desirable; the larger the bird, the better it suits market purposes. The Mammoth Bronze breed of turkeys attain a larger size, and develop faster, than other breeds. Besides this, they dress out excellent in skin appearance. They also fatten better; of course, any breed of turkey is desirable, if the birds are fat. People who take pains to fatten their poultry before marketing, can always be sure of realizing top market prices.

The last few years a big demand has sprung up for guineas. For young guineas weighing from two to two and one-half pounds, each, it is an easy matter to get \$5 per dozen. Old guineas are not worth as much. Broilers are in best demand during the months of May, June, July, August and September. Prices are highest during the months of May and June. Broilers should weigh from one and one-fourth to two and one-half pounds each. Best average weight is from one and one-half to two pounds each. It certainly pays to raise broilers for the market. Ship them alive only.

Live and dressed poultry should always be shipped by express. It is not necessary to prepay express charges. The poultry buyers in the large markets are glad to pay the express charges at their end of the line, and then deduct what they had to pay, when sending remittance. Some firms charge a commission for selling poultry, and some firms buy the poultry outright. It is well to write for prices to the firms that advertise in farm and poultry papers, as they are all reliable, otherwise, their advertisements would not be permitted. Poultry should be shipped dressed only during the cold weather months, say during November, December and

January, if the weather is cold and freezing. Of course, poultry can be shipped alive at any time of the year. Do not make the mistake of holding back your shipments until just a day or two before the Holidays.

Get your poultry ready early, and have it on the market in plenty of time, so the poultry buyers can display it, and sell it to the best advantage. Even ten days to two weeks before the holidays is not too early to have your poultry arrive on the market. Market is generally overstocked about a day or two before the holidays and prices go much lower. Therefore, it will pay you to ship early. Oftentimes the weather is mild around Thanksgiving time, and it is hardly safe to ship poultry dressed during mild weather. In such a case, either ship the poultry alive, or wait until December for colder weather, if you prefer to ship your poultry dressed.

Large, fat turkeys are in best demand for the Thanksgiving market. Hen turkeys should weigh at least eight pounds or over live weight, and young tom turkeys, at least ten pounds or over, live weight and they must be fat. The best way to tell whether a turkey is fat or not, is to pick it up by its legs, ruffle back the feathers on the haunches, and if the turkey is fat on the haunches, you can be sure it is fat all over. If any of your turkeys are thin, poor or undersized, hold them back for a later market. Chickens, ducks and geese are also in good, active demand for this holiday and should be well fattened before either shipping alive or shipping dressed. If weather is freezing, you can safely ship your poultry dressed. If weather is soft or mild, it is best to be on the safe side and ship alive. Have your shipments arrive on the market either one week or two weeks before the holidays, and you will get the best price.

All varieties of poultry are wanted for the Christmas holiday. Poultry is in much better condition at Christmas time than at Thanksgiving. Of course,

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These two books and view give a comprehensive, honest history and description of the State, her principal cities, resources and her two great Expositions. Sent postpaid for a one dollar bill, money order, draft or check. North American Press Association, 1445 Hearst Building, San Francisco



you should be sure all your poultry is fat before you ship it, either alive or dressed. As a rule, most shippers prefer to ship poultry dressed for Christmas market. Prices on fat, dressed turkeys, ducks, geese and chickens generally rule the highest, say from December 1st to December 20th. After that market is liable to work a little lower on account of heavy receipts, so you see it pays to ship early and to ship good, fat stock.

People generally have their fill of turkey Thanksgiving time or Christmas time, and want a change, so this means a good demand for fat, heavy hens, and fat spring chickens, as well as ducks and geese for New Year holidays. It is a good time to send in your surplus old hens and spring chickens. Get rid of all young roosters before February 1st, except breeders. Of course some turkeys are wanted, and the price is about the same as for the Christmas market. Poultry is always wanted all during January, so if you have any backward stock, you can get it in shape by that time to put it on the market.

Best market days every week are Tuesday, Wednesday and Thursday. Saturday and Monday are generally poor market days.

**Killing:** In the first place, poultry should be kept from feed for twelve to twenty-four hours before killing. Hang birds up by their feet on string. Kill by bleeding in the mouth, or opening the veins of the neck. Don't cut off head. It is a good idea to put a hook with a weight on it in the bill of heavy birds, like turkeys and geese, to prevent the bird from fluttering and spattering blood all around. Leave the feet and head on. Do not draw either crops or intestines.

**Animal heat:** One of the most important things in dressing poultry is to cool out poultry thoroly after it is dressed. The birds should be hung up or laid on a rack in a cool airy place for six or eight hours, or over night. Never pack dressed poultry for shipment until you are absolutely sure the animal heat is entirely out of the body.

**How to dress turkeys:** The way to tell whether a bird is fat enough for market, is to pick them up by their legs, ruffle back the feathers on the haunches, so you can see the skin, and if the bird is not fat, it will show up thinner on the haunches than any other place. Throw back the thin birds, give them plenty of feed, and save them for a later market. We can use your poultry any time in the year. Always dry-pick turkeys—kill them as noted above. The wing and tail feathers should be plucked first, as they are the hardest ones to pull.

Don't give them a straight pull, as that sets them; they come out easier with a twist. Pick cleanly, being careful not to tear the skin. Do not leave wing feathers on—pluck all feathers.

**How to dress ducks and geese:** The best way to dress your ducks and geese, is to scald-pick them; the water should be at the boiling point; the birds should be held by their heads and dipped in the water eight or ten times until the water penetrates thru to the skin. Don't pluck the feathers while the birds are alive, as if this is done, the skin shows up rough and bloody after they are dressed, giving them a very unsightly appearance. If you dry-pick your ducks and geese, don't singe the body to remove the down substance, as singeing gives the birds an oily appearance, and they don't look attractive to the buyers.

**How to dress chickens:** We advise scald-picking chickens. Don't get the water too hot. Have it as near the boiling point as you can. Hold the birds by the head, dip them five or six times, and when you notice the wings start to gather up to the body, you will know they are sufficiently scalded. Hang birds up by their feet after scalding them, and pluck immediately.

**Packing:** It is very important that you pack your poultry snugly, so it can't move around and get bruised before it arrives here. Pack in barrels or boxes, but be sure they are well secured and strong packages, so they won't be broken open in transit, causing a loss to you.

## A FRIEND IN NEED

A year ago about this time a young fellow named P——— from up in the northern row of counties in North Dakota left home. Going to college had been the ambition of this boy for many years, altho the small earnings of his father and the heavy expense of maintaining the family had kept him from making very definite plans. However, one evening early in September this young lad found himself on the depot platform in Fargo; he had just stepped off the train and was trying as best he could to find his bearings, when another young fellow somewhat older than he stepped up to him and lifting up a green ribbon badge which read "Reception Committee" on it, said to the new comer, "Going to the A. C.?" P——— looked up at him and said, "That's where I'm headed for." "Well," the older one replied, "I'm looking for all the new men who came in on this train. I want to show you the way out there and help you around. Got a room for tonight?" The boy was surprised to find some one at the very start who seemed to be so much interested in him, and for a moment he looked even with a bit of suspicion on this one who would befriend him.

"Who are you?" P——— asked.

"My name is W———," came the reply. "This is my second year at the College, my home is out in Kidder county."

"Well, it's good of you to come down here to find me this way," said the new boy, "how did you come to be down here—were you looking for somebody you knew?"

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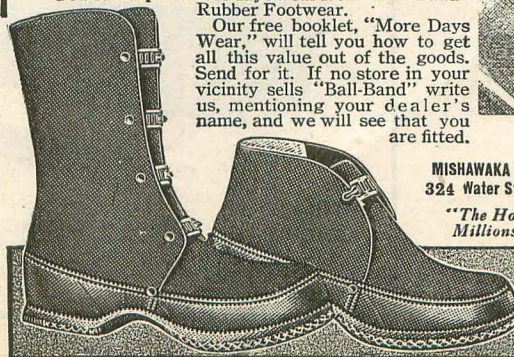
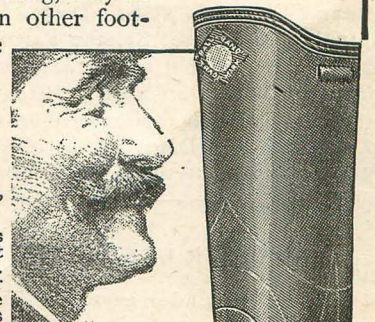
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"No," he replied to him, "it's just a little bit of our regular way of doing things. Maybe you have heard of the student organization here called the Young Men's Christian Association, we have a committee, this Reception Committee, of a few fellows who meet the new men and help them to get located. Now here's our car, let me have your grip there, and we'll go right out. The Secretary is out there tonight and he can help you find the kind of a room you want, and a boarding place, then if we get that fixed up in time we can go over to the Armory and meet some of the older students and some other new men, who are all over there tonight at a little "mixer."

This is the way P——got started at A. C. It is not surprising to know that he made the acquaintance, and later the friendship of a group of the cleanest and strongest men in College. He not only did that, but he soon came to be interested in many of the best things in College life; a literary society, a basket ball team, and thru it all kept a good average in his school work. A friend helped him start right. The Student Young Men's Christian Association is there to serve every boy no matter who he is or where he comes from, it is there to help men make the most of the years they come to spend in North Dakota at the Agricultural College.

#### EXPOSITION WILL BE OPENED

Rumors have been prevalent that owing to the war in Europe the Expositions scheduled for 1915 at San Diego and San Francisco would be postponed or abandoned. These reports have no foundation, in fact. These expositions upon which so much money has already been expended will be held as originally planned—the Panama-California at San Diego, January 1 to December 31; the Panama-Pacific International at San Francisco, February 20 to December 4, 1915, according to official advices received by the Passenger Department of the Northern Pacific Railway, at St. Paul.

#### FROM OUR EXCHANGES

An excellent and inexpensive paste is made in this way: Grate a small potato; add enough boiling water to make it clear; then boil five minutes. This is much better than either flour or corn starch paste.

An inexpensive casserole or baking dish can be made from an ordinary milk crock. Take either a one or a two-gallon milk crock, and temper it

by soaking it twenty-four hours in cold water, then placing it in a cool oven, bringing it gradually to the boiling point. For roasting a rack can be made by placing in the bottom a pie tin punched full of holes. Place the meat on this rack with water underneath and in this way all the flavor is retained and the toughest meat may be made tender.

When making a hem down the back of a waist on which fasteners are to be sewn, a straight strip of cloth sewed inside the hem will make it easy to keep the stitches from showing when sewing on the fasteners.

If mothers when making the trousers for small boys will put a piece of the same material between the outside and the lining over the knees, it will be all ready when repairs are to be made. It will be sure to be needed.

To iron drawn-work, stretch the work and tack tightly on the ironing-board, and it can be ironed smoothly and nicely.

If the needle in your sewing-machine seems to be getting dull, and often pulls and catches on the material which you are sewing, remove the needle and rub it on a piece of emery-board or a piece of sand-paper. This will sharpen it and make it as good as new.

#### COLD LAMB WITH PEAS

Chop lamb into small pieces; to one cup of meat add one small onion and one cup of peas. Season with pepper and salt. Mix meat and vegetables together lightly, and heap in the middle of a shallow baking dish. Cover with buttered crumbs and bake until brown.

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## Seasonable Receipts

Edited by Mrs. Sadie Baird.

### Dried Raspberry Pie

Sprinkle bottom of pie crust with dried black raspberries. Over these put three-fourths cup sugar mixed with one heaping tablespoon flour. Pour in one cup cold water. Put on top crust and bake slowly. (Very nice).

### Mock Cherry Pie

One cup cranberries (chopped fine) one cup sugar, one-half cup seeded raisins, one-half cup boiling water, one tablespoon flour, one dessert spoonful vanilla. Bake with two crusts.

### Mother's Mince Meat

Four bowls of chopped meat; one pound raisins; two bowls of chopped suet; one pound currants; eight bowls of chopped apples. Eight cups sugar, three teaspoonfuls of cinnamon, two quarts of vinegar, two teaspoonfuls cloves, two quarts of water, two teaspoons allspice, four tablespoonfuls salt. Cider in place of vinegar and water may be used if desired. This will make two gallons.

### Pumpkin or Squash Pie

Cook, without peeling either squash or pumpkin and run thru colander. Take one cup strained pumpkin, one egg, four spoons sugar, two spoons molasses, salt, ginger, nutmeg, cinnamon, each one-half spoon, one cup milk. Add two or three spoons cream if you can. Mix thoroly and bake with one crust. Try by cutting knife in and when done it will come out clear.

### Coffee Cake

One cup dark molasses, one cup sugar, one cup lukewarm coffee, with teaspoon soda in it. One-half cup chopped raisins and spices to taste, in flour, one beaten egg.

### Prune Conserve

Five pounds prunes pitted and chopped, four oranges, four lemons, four pounds sugar. Let stand twenty-four hours. Skin and cook rinds, chopping them after cooking. Add the uncooked pulp to prunes with one pound seeded raisins, one pound English Walnuts chopped fine. Add a little salt and cook all one-half hour.

### Fried Round Steak

Take a good cut of round steak and pound it full of flour until no more can be pounded into it, then salt and pepper it; sear on both sides by placing in a hot frying pan, cover with hot water and bake for twenty minutes

in a hot oven. A little onion or a bay leaf may be added if liked.

### Sewing on Lace by Machine

Many prefer to sew on lace by hand (a long task on a ruffle), because they do not like to see the second row of stitching. This is how I sew on lace so that it doesn't show where it is stitched:

First decide on width of hem, crease, bottom edge of lace toward top of the ruffle; then turn lace down and hem. The stitching will be on the inside of hem.

### For Fly Time

In fly time close the kitchen windows, add a quarter of a teaspoonful of carbolic acid to a pint of water and allow it to boil vigorously for five minutes. Then raise the windows and the flies that are not dead will fly out. Doing this once or twice a week will rid the house of these pests, and destroy as well other germs that may be in the room. No one should remain in the room, as the fumes of the carbolic acid might be injurious.

### Use of a Scrub Brush

A three-cent scrub brush with stiff bristles is invaluable when washing badly soiled collar bands, mud-splashed hems or other stains. Lay the cloth smoothly on the wash board, wet the brush, rub it across a bar of soap, then scrub the garment with short strokes of the brush.

### When Cooking Rice

Add a teaspoonful of lemon juice to rice when cooking it. It improves the flavor, and serves to make the rice very white, and keep the grains separate.

### Winter Relish

Three quarts of green tomatoes, three large heads of cabbage, one quart of onions, three green peppers. Chop fine and soak in weak brine over night; drain and add three quarts of vinegar, four cupfuls of sugar, one large tablespoonful of brown mustard seed, one ounce of celery seed and one-half ounce of tumeric powder. Bring to a boil, then add one cupful of flour moistened with a little cold water. Can at once. If not cooked too long, this has a crisp, fresh flavor that is very pleasing for winter and early spring use.

### Ham Patties

Two cupfuls of cold cooked ham minced fine; stir into four cups of bread crumbs moistened in milk. To

this add a large lump of butter and any seasonings liked. Pour the batter into gem pans, filling about two-thirds full. Break an egg over each, sprinkle with bread crumbs and bake until brown.

### Holland Sauerkraut

Put sauerkraut in a colander and rinse with cold water. Then put it into a stewpan with a little water, sprinkle with caraway seeds and cook slowly until soft. Grate one medium-sized raw potato and blend with a little flour, then beat quickly into the sauerkraut; cook until the flour is done. Sprinkle two tablespoonfuls of fat from pork roast over the kraut and serve hot with the roast.

### Sour Milk and Cream

Many women not knowing the true value of sour milk and cream, throw it in the garbage pail. Sour milk and cream may be used in various ways. In making cottage cheese, muffins, waffles, griddle cakes, corn bread, etc., it is far superior to sweet milk or cream. A half cup of thick, sour cream added to hash, chicken, veal or beef loaf makes it creamy and unusually nice. Sour cream is superior to sweet for boiled dressings, salad dressings and sandwich fillings, as it is for maple or any other kind of fudge or cream candy, or for layer cake filling.

Sour milk will remove mildew or perspiration stains from white or light goods, and will bleach brown muslin or linen beautifully. Why not save these useful articles instead of throwing them away?

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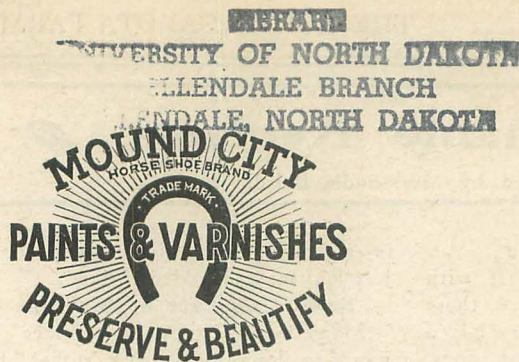
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The trouble with such houses is that they are Oil-hungry. They are painted with a paint that has not enough Linseed Oil in it—a paint that never *could* have enough Oil in it on account of the character of the pigments used.

The best Paint *must* do two things. It must preserve and beautify. Do you know that Linseed Oil is *the* great preservative in Paint and that if it were not for the sake of appearance, you could give your house a coat of pure Linseed Oil, and it would be protected?

The solid part of Paint (Strictly Pure White Lead, Strictly Pure Zinc, and, in some Paints, baser metals) acts as beautifier only.

Strictly Pure Zinc absorbs more Oil than any other pigment and that is the reason for its use in Horse Shoe Paint. WHITE LEAD is used for its covering qualities, and ZINC for its *Oil-carrying* capacity.

And Oil-carrying capacity is what your Paint *must have* if your property is to be protected.

Horse Shoe Paint, while it covers and beautifies the surface thoroughly, is made of pigments that carry so much oil, that the *first* coat satisfies the oil-hunger of the wood leaving the second coat to gloss, harden, protect, and beautify.

That's why Mound City Horse Shoe Brand House Paint HOLDS its gloss.

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